

# MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL  
RAILROAD AND FINANCIAL NEWSPAPER.

## The World's Increasing Consumption of Iron.

Mr. Edward Atkinson, writing from Boston under date of October 24 to the Manufacturers' Record regarding the available supply of iron ore and the future of the iron industry, among other things, says:

"This depression in the prices of iron is a temporary matter. My various prophecies each provided for a temporary setback in each decade. In my last I anticipated a temporary depression in the present decade, such as has now come. What of it? Prices will go down to a point where the tariff will become inoperative, and that is the most desirable point, because then we are on an even plane with Great Britain in the cost of the crude materials for machinery. Our exports of machinery will begin again on a very large scale, and presently building will begin; the depression will pass. \* \* \* In my last prophecy on the basis of forty million (40,000,000) tons as the world's product of 1900, I anticipated sixty million (60,000,000) tons by 1910, or at the furthest at 1915. That was based on a maximum consumption in this country of four hundred (400) pounds per head. It is already over five hundred (500) pounds. Sixty million (60,000,000) tons will be absolutely needed by 1910. Europe has reached its maximum."

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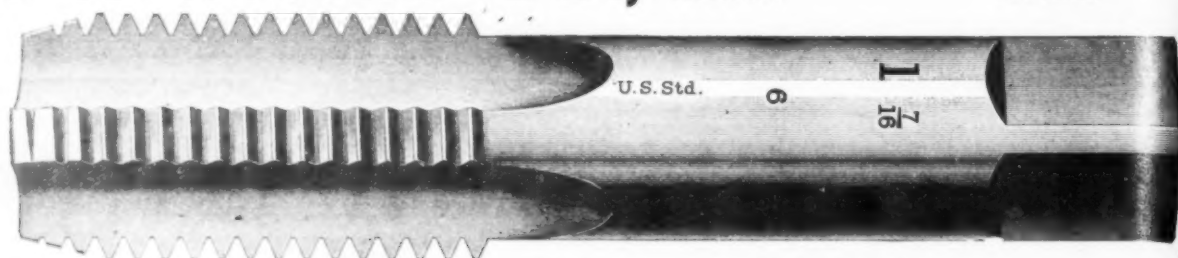
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Baltimore, November 5, 1903.

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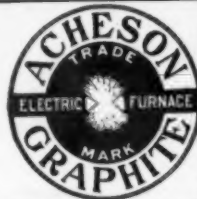
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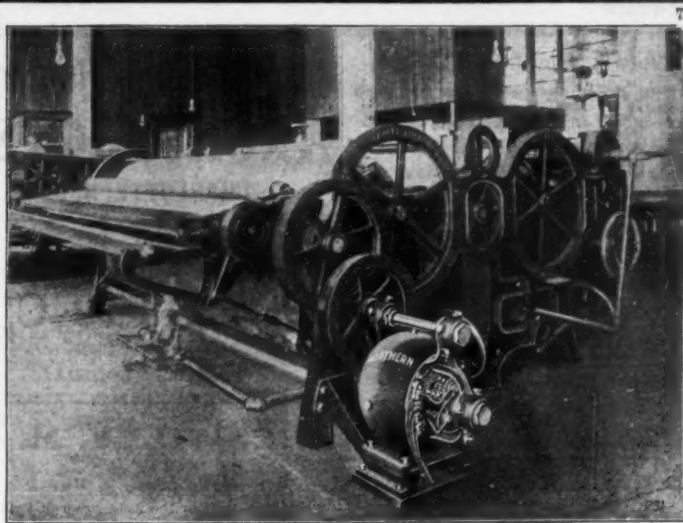
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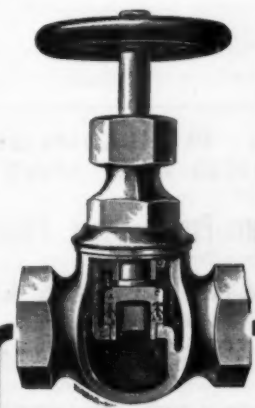
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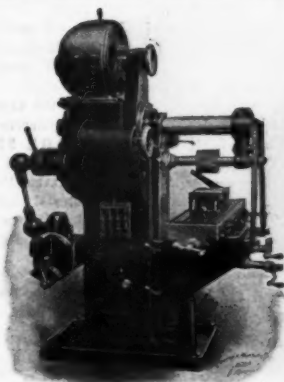
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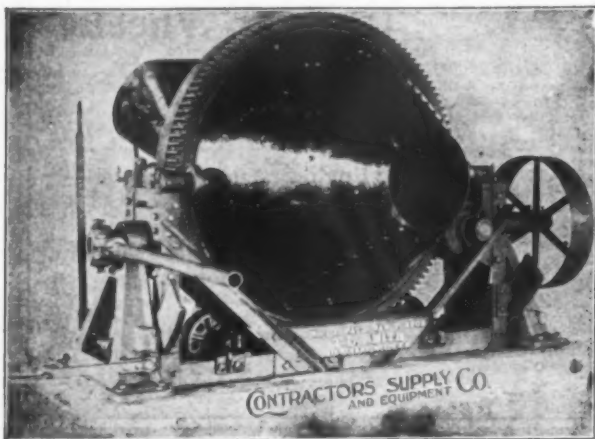
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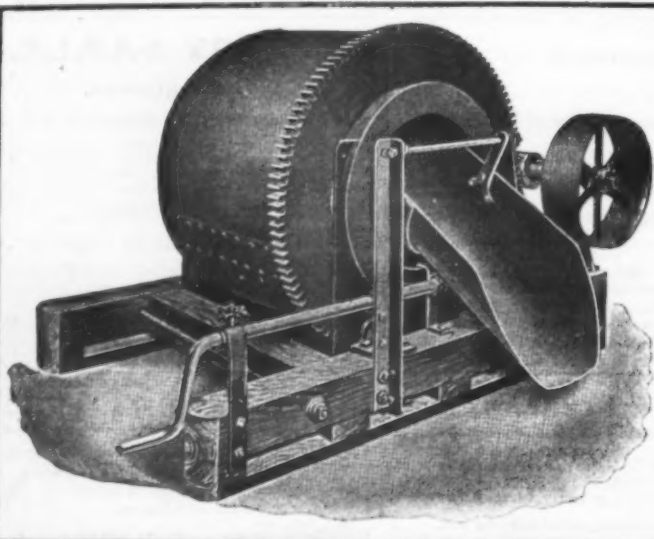
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Valley Iron Works, Williamsport, Pa.  
 Viller Mfg. Co., Milwaukee, Wis.  
 Vogt, Henry, Machine Co., Louisville, Ky.  
 Walker, Henry, Co., Norfolk, Va.  
 Westinghouse, Church, Kerr & Co., Pittsburgh, Pa.  
 Westinghouse Machine Co., Pittsburgh, Pa.  
**Engines.** (Gas, Gasoline and Kerosene.)  
 Blakelee Mfg. Co., The, Birmingham, Ala.  
 Brown-Cochran Co., Lorain, O.  
 Capital Gas Engine Co., Indianapolis, Ind.  
 Columbus Machine Co., Columbus, O.  
 Gibbs, W. H., & Co., Columbia, S. C.  
 Otto Gas Engine Works, Philadelphia, Pa.  
 Pennsylvania Iron Works, Philadelphia, Pa.  
 Price, S. M., Machinery Co., Norfolk, Va.  
 Westinghouse, Church, Kerr & Co., Pittsburgh, Pa.  
 Westinghouse Machine Co., Pittsburgh, Pa.  
**Engines.** (Hydraulic Pumping.)  
 Niagara Hydraulic Engine Co., Chester, Pa.  
**Engravers.**  
 Alpha Photo-Engraving Co., Baltimore, Md.  
 Baltimore-Maryland Engraving Co., Baltimore, Md.  
 Middleton, J. W., & Co., Chicago, Ill.  
**Excelsior Machines.**  
 American Excelsior & Machine Co., Baltimore, Md.  
 Gibbs, W. H., & Co., Columbia, S. C.  
**Exhaust Heads.**  
 Burt Mfg. Co., Akron, O.  
**Expansion Belts.**  
 N. J. Foundry & Machine Co., New York, N. Y.  
**Fans.** (Electric.)  
 Electrical Material Co., Baltimore, Md.  
 General Electric Co., Schenectady, N. Y.  
 Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.  
**Fans.** (Ventilating.) (See Blowers, Exhaust Fans.)  
**Feed-Water Heaters and Purifiers.**  
 Bess Machine Co., Joliet, Ill.  
 Gibbs, W. H., & Co., Columbia, S. C.  
 Green Fuel Economiser Co., Mattawan, N. Y.  
 Greenwald Co., I. & E., Cincinnati, O.  
 Kelley, Benj. F., & Son, New York, N. Y.  
 McAdoo, Thomas, Philadelphia, Pa.  
 National Pipe Bending Co., New Haven, Conn.  
 Petroleum Iron Works Co., Washington, Pa.  
 Seafie, Wm. B., & Sons, Co., Pittsburgh, Pa.  
 Silwell-Bierce & Smith-Valle Co., Dayton, O.  
 Webster & Co., Warren, Camden, N. J.  
**Felt.**  
 Bader, Adamson & Co., Philadelphia, Pa.  
**Fencing.** (Iron, Steel, Wire.)  
 Bolles Iron & Wire Works, J. E., Detroit, Mich.  
 Buffalo Wire Works Co., Buffalo, N. Y.  
 Dufur & Co., Baltimore, Md.  
 Eureka Supply Co., Chattanooga, Tenn.  
 Ludlow-Saylor Wire Co., St. Louis, Mo.  
 New Jersey Wire Cloth Co., Trenton, N. J.  
**Fertilizer Machinery.** (See Phosphate Mch.)  
**Files.**  
 Barnett Co., G. & H., Philadelphia, Pa.  
 Miller Oil & Supply Co., Indianapolis, Ind.  
 Nicholson File Co., Providence, R. I.  
**Filler.** (Iron.)  
 Obermayer, S., Co., Cincinnati, O.  
 Wisconsin Graphite Co., Pittsburgh, Pa.  
**Filters.** (Water.)  
 Seafie, Wm. B., & Sons, Co., Pittsburgh, Pa.  
**Filters.** (Oil.)  
 Burt Mfg. Co., The, Akron, O.  
 Capilar Co., Philadelphia, Pa.  
**Filter Presses.**  
 Silwell-Bierce & Smith-Valle Co., Dayton, O.  
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 Carolina Portland Cement Co., Killian, S. C.  
 Georgia Vitrified Brick & Clay Co., Augusta, Ga.  
 Krieshaber, V. H., Atlanta, Ga.  
 Maryland Lime & Cement Co., Balto., Md.  
 Obermayer, S., Co., Cincinnati, O.  
 Ohio Fire-Brick Co., Oak Hill, O.  
 Pomona Terra Cotta Co., Pomona, N. C.  
 Powhatan Clay Mfg. Co., Richmond, Va.  
 Stevens, H., Sons Co., Macon, Ga.  
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 Badger Fire Extinguisher Co., Boston, Mass.  
 General Fire Extinguisher Co., Providence, R. I.  
**Fire Escapes.**  
 Bolles Iron & Wire Works, J. E., Detroit, Mich.  
**Flexible Joints.**  
 Moran Flexible Joint Co., Louisville, Ky.  
**Flooring.** (Hardwood.)  
 Adams, J. M., Baltimore, Md.  
 Ferman, Thomas, Co., Detroit, Mich.  
 Wilco, The, Chicago, Ill.  
 Wilkins, Van S., Lumber Co., Mobile, Ala.  
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 Caldwell, H. W., & Son Co., Chicago, Ill.  
 DeLoach Mill Mfg. Co., Atlanta, Ga.  
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 Nerdly & Marmon Co., Indianapolis, Ind.  
 Sprout, Waldron, & Co., Quincy, Pa.  
 Starr, S. F., & Co., Baltimore, Md.  
 Wolf Co., Chambersburg, Pa.  
**Flue Hoppers.** (For Boilers.)  
 Gen Mfg. Co., Pittsburgh, Pa.  
**Foot Valves.**  
 Newman Mfg. Co., New York, N. Y.  
**Forges.**  
 Sturtevant Co., B. F., Boston, Mass.  
**Forging.**  
 Alabama Iron Works, Mobile, Ala.  
 Wilcox, D. Mfg. Co., Mechanicsburg, Pa.  
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**Friction Clutches.**  
 Brown, A. & P., New York, N. Y.  
 Minster Machine Co., Minster, O.  
**Fuel Economiser.**  
 Green Fuel Economiser Co., Mattawan, N. Y.  
**Fuel Oil Equipment.**  
 Petroleum Iron Works Co., Washington, Pa.  
 Rockwell Engineering Co., New York, N. Y.  
**Furnace Builders.**  
 Kennedy, Walter, Pittsburgh, Pa.  
 Means & Fulton Iron Works, Birmingham, Ala.  
**Furnaces.** (Blast.)  
 Pollock, Wm. B., Co., Youngstown, O.  
**Furnaces.** (Metallurgical.)  
 Rockwell Engineering Co., New York, N. Y.  
**Gages (Recording) and Counters.**  
 Amer. Steam Gauge & Valve Mfg. Co., Boston, Mass.  
 Crosby Steam Gauge & Valve Co., Boston, Mass.  
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 American Sheet Steel Co., New York, N. Y.  
 Bourne-Fuller Co., Cleveland, O.  
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 Brown-Cochran Co., Lorain, O.  
**Gas Meters.**  
 Pittsburgh Meter Co., E. Pittsburgh, Pa.  
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 Wood, H. D., & Co., Philadelphia, Pa.  
**Gas and Steam Fitters' Tools.**  
 Sanders' Sons, D., Yonkers, N. Y.  
 Simmons, John, Co., New York City.  
**Gaskets.**  
 Boston Belting Co., Boston, Mass.  
 N. J. Car Spring & Rubber Co., Jersey City, N. J.  
 Peerless Rubber Mfg. Co., New York, N. Y.  
 Voorhees Rubber Mfg. Co., Jersey City, N. J.  
**Gear Cutting Machines.**  
 Whiton Machine Co., D. E., New London, Conn.  
**Gearing.**  
 Brown, A. & P., Co., New York, N. Y.  
 Caldwell, H. W., & Son Co., Chicago, Ill.  
 Case Mfg. Co., Columbus, O.  
 Chester Steel Casting Co., Philadelphia, Pa.  
 Fairmount Machine Co., Philadelphia, Pa.  
 Jeffrey Mfg. Co., The, Columbus, O.  
 Greenwald Co., I. & E., Cincinnati, O.

Link-Belt Engineering Co., Philadelphia, Pa.  
 Nerdly & Marmon Co., Indianapolis, Ind.  
 Taylor Iron & Steel Co., High Bridge, N. J.  
 Tompkins, D. A., Co., Charlotte, N. C.  
 Woods, T. B., Sons, Chambersburg, Pa.  
**Geologists.**  
 Catlett, Chas., Staunton, Va.  
 Frechling & Robertson, Richmond, Va.  
 Governor. (Water Wheel.)  
 Republic Governor Works, Akron, Ohio.  
**Graphite.**  
 Detroit Graphite Mfg. Co., Detroit, Mich.  
 Dixon Crucible Co., Jersey City, N. J.  
 Intercontinental Graphite Co., Niagara Falls, N. Y.  
 Obermayer, S., Co., Cincinnati, O.  
 Wisconsin Graphite Co., Pittsburgh, Pa.  
**Grates and Grate Bars.**  
 McClave-Brooks Co., Scranton, Pa.  
 Miller Oil & Supply Co., Indianapolis, Ind.  
 Sanford-Day Iron Works, Knoxville, Tenn.  
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 Caldwell, H. W., & Son Co., Chicago, Ill.  
 Jeffrey Mfg. Co., Columbus, O.  
 Link-Belt Engineering Co., Nicotown, (Phila.) Pa.  
**Grenase.** (Lubricating.)  
 Cook's Sons, Adam, New York, N. Y.  
 Robinson, Wm. G., & Son, Baltimore, Md.  
**Grinding and Polishing Machinery.**  
 Abrasive Material Co., The, Philadelphia, Pa.  
 Carborundum Co., The, Niagara Falls, N. Y.  
 Monarch Emery & Corundum Wheel Co., Camden, N. J.  
 Norton Emery Wheel Co., Worcester, Mass.  
**Vitrified Wheel Co., Westfield, Mass.**  
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 Peters Cartridge Co., Cincinnati, O.  
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 Rand Drill Co., New York, N. Y.  
 Robinson, J. M., Mfg. Co., Cincinnati, O.  
 Savannah Locomotive & Car Works, Savannah, Ga.  
**Handle Mch.** (See Woodworking Mch.)  
 Fay, J. A., & Egan Co., Cincinnati, O.  
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**Hardware Specialties.**  
 Wrightville Hardware Co., Wrightville, Pa.  
**Hay Tools.**  
 Myers & Bro., F. E., Ashland, O.  
**Heating Apparatus.**  
 American Blower Co., Detroit, Mich.  
 Andrews & Johnson Co., Chicago, Ill.  
 Dixie Mfg. Co., Baltimore, Md.  
 Downman-Doxier Mfg. Co., Atlanta, Ga.  
 Monitor Steam Generator Mfg. Co., Baltimore, Md.  
 Peck-Hammond Co., The, Cincinnati, O.  
 Sturtevant Co., R. F., Boston, Mass.  
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**Hoisting Machinery.**  
 American Ship Windlass Co., Providence, R. I.  
 Byers Machine Co., John F., Ravenna, O.  
 Contractors' Plant Mfg. Co., Buffalo, N. Y.  
 Duke Engine Co., Grand Haven, Mich.  
 Flory, S. Mfg. Co., Bangor, Pa.  
 Hardie-Tynes Mfg. Co., Birmingham, Ala.  
 Hayward Co., New York, N. Y.  
 Jeffrey Mfg. Co., The, Columbus, O.  
 Link-Belt Engineering Co., Philadelphia, Pa.  
 Lidgerwood Mfg. Co., New York, N. Y.  
 Males Co., The, Cincinnati, O.  
 Price, S. M., Machinery Co., Norfolk, Va.  
 Rorer, J. W., & Co., Philadelphia, Pa.  
 Rawson & Morrison Mfg. Co., Milford, Boston, Mass.  
 Sprague Canning Machinery Co., Chicago, Ill.  
 Sullivan Machinery Co., Chicago, Ill.  
**Hoists.** (Electric.)  
 Pawling & Harnischfeger, Milwaukee, Wis.  
**Hoists.** (Pneumatic, Motor.)  
 Rand Drill Co., New York, N. Y.  
**Horse Shoes.**  
 Old Dominion Iron & Nail Works Co., Richmond, Va.  
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**Hose.**  
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 Peerless Rubber Mfg. Co., New York, N. Y.  
 Voorhees Rubber Mfg. Co., Jersey City, N. J.  
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 American, Chicago, Ill.  
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 Niagara Hydraulic Engine Co., Chester, Pa.  
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 Frick Co., Waynesboro, Pa.  
 Healy Ice Machine Co., Chicago, Ill.  
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 Pennsylvania Iron Works, Philadelphia, Pa.  
 Remington Machine Co., Wilmington, Del.  
 United Iron Works Co., Springfield, Mo.  
 Viller Mfg. Co., Milwaukee, Wis.  
 Vogt, Henry, Machine Co., Louisville, Ky.  
 Wolf Co., The, Fred, W., Chicago, Ill.  
 York Mfg. Co., York, Pa.  
**Incorporators.** (Companies.)  
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 Delaware Trust Co., Wilmington, Del.  
 District of Columbia Charter Co., Washington, D. C.  
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 Crosby Steam Gauge & Valve Co., Boston, Mass.  
 Scranton Steam Pump Co., Scranton, Pa.  
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 Lafourche Progressive Union, Thibodaux, La.  
 Metropolitan Investment Co., Charleston, S. C.  
 Old Dominion Land Co., Newport News, Va.  
 Rayne, La. C. W. Lyman, Secretary Progressive Union.  
 Richards, M. V., L. & T. Agent, Washington, D. C.  
 Seaboard Air Line, Portsmouth, Va.  
 Southern Pacific Houston, Tex.  
 St. Louis & San Francisco Railroad, St. Louis, Mo.  
 Sutherland, Howard, Land Agent, Elkins, W. Va.  
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 Koppel, Arthur, New York City.  
**Injectors.**  
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 Lunkenshelmer Co., Cincinnati, O.  
 Ohio Injector Co., Wadsworth, O.  
 Penberthy Injector Co., Detroit, Mich.  
 Schofield, J. B., Sons, Co., Macon, Ga.  
 Simmons, John, Co., New York, N. Y.  
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 Electrical Material Co., Baltimore, Md.  
 Hazard Manufacturing Co., Wilkes Barre, Pa.  
**Insulators.** (Glass.)  
 Electrical Material Co., Baltimore, Md.  
**Insulators.** (Rubber.)  
 Alleghany Pin & Bracket Co., Covington, Va.  
 Electrical Material Co., Baltimore, Md.  
 Houston & Liggett, Louisville, Tenn.  
**Insulator Pin Machinery.**  
 Chattanooga Machinery Co., Chattanooga, Tenn.  
**Insurance.**  
 Hartford Steam Boiler Inspection & Insurance Co., Hartford, Conn.  
 Maryland Casualty Co., Baltimore, Md.  
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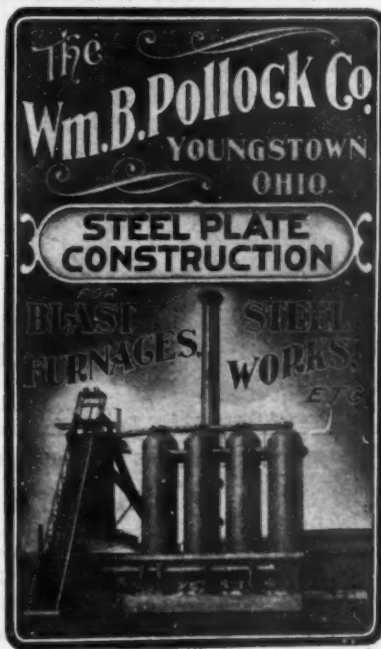
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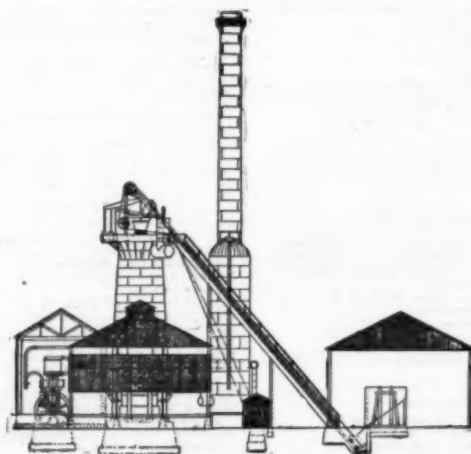
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Watson-Stillman Co., New York, N. Y.

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(Steam Jacks.)

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Petroleum Iron Works Co., Washington, Pa.

Pollock, Wm. B., Co., Youngstown, O.

## Milling Machinery.

(Saw and Automatic.)

Fay, J. A., &amp; Co., Cincinnati, O.

Smith, H. B. Machine Co., Smithville, N. J.

## Knitting Machinery.

Campbell &amp; Glue Machine Co., Cohoes, N. Y.

Mayo Knit. Mch. &amp; Needle Co., Franklin Falls, N. H.

McMichael &amp; Wildman Mfg. Co., Norristown, Pa.

Rye &amp; Treddick Co., Philadelphia, Pa.

Ruth Auto. Knitting Machine Co., York, Pa.

Scott &amp; Williams, Philadelphia, Pa.

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(Kerosene.)

Hann, C. T., Mfg. Co., Rochester, N. Y.

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Alexander, Jr., Co., S. B. Charlotte, N. C.

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Electric Supply Co., Savannah, Ga.

General Electric Co., Schenectady, N. Y.

Kentucky Electric Co., Owensboro, Ky.

Piedmont Electric Co., Asheville, N. C.

Shelby Electric Co., Shelby, O.

Standard Electric Co., Norfolk, Va.

Sterling Electric Mfg. Co., Warren, O.

Westinghouse Electric &amp; Mfg. Co., Pittsburgh, Pa.

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(Incandescent.)

Incandescent Elec. Lgt. Manipulator Co., Boston, Mass.

Pacific Electric Co., La Crosse, Wis.

## Lamp Repainter.

(Incandescent.)

Incandescent Elec. Lgt. Manipulator Co., Boston, Mass.

## Lamp Shades &amp; Guards.

(Incandescent.)

Incandescent Elec. Lgt. Manipulator Co., Boston, Mass.

## Lands.

Abbott, F. C., &amp; Co., Charlotte, N. C.

Brookston, Feidig &amp; Co., Brunswick, Ga.

Clark, Chas. E., Augusta, Ga.

Martin &amp; Bro., Augusta, Ga.

Richards, M. V., Land &amp; Industrial Agt., Wash., D. C.

Seaboard Air Line, Portsmouth, Va.

Sutherland, Howard, Land Agent, Atkins, W. Va.

Southern Pacific, Houston, Tex.

St. Louis &amp; San Francisco Railroad, St. Louis, Mo.

Watson, H. K., Atlanta, Ga.

Winegar, O. H., St. Louis, Mo.

## Lathes.

(Engine.)

Baird Mch. Co., Pittsburg, Pa.

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Gibbs, W. H., &amp; Co., Columbia, S. C.

Robinson, W. C., &amp; Son, Co., Baltimore, Md.

McCabe, J. J., New York, N. Y.

Price, S. M., Machinery Co., Norfolk, Va.

Savannah Loco. Works &amp; Supply Co., Savannah, Ga.

Schumacher &amp; Bore, Cincinnati, O.

Walke, Henry, Co., Norfolk, Va.

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Adams Laundry Machinery Co., Troy, N. Y.

Dawson, A. L., &amp; Co., Chicago, Ill.

Hinchliff, C. S., Chicago, Ill.

Wilson Laundry Machinery Co., Columbia, Pa.

## Lead.

(Sheet.)

Robertson Mfg. Co., James, Baltimore, Md.

## Lead and Tin.

(Fig.)

Hiers, Theo., Metal Co., St. Louis, Mo.

Ryan &amp; Co., J. J., Chicago, Ill.

## Letters.

(PATTERN.)

Brim, A. W., Seneca Falls, N. Y.

## Lime.

Carolina Portland Cement Co., Charleston, S. C.

Kreighbaum, V. H., Atlanta, Ga.

Maryland Lime &amp; Cement Co., Balto., Md.

Southeastern Lime &amp; Cement Co., Charleston, S. C.

Warner, Charles Co., Wilmington, Del.

## Locomotive Builders.

American Locomotive Co., New York, N. Y.

Baldwin Locomotive Works, Philadelphia, Pa.

Byers, Jno. F., Mch. Co., Ravenna, O.

Ulmex Mfg. Co., Corry, Pa.

Low, Edgar S., Co., Pittsburg, Pa.

Males Co., Cincinnati, O.

Porter, H. K., Co., Pittsburg, Pa.

## Looms.

American Supply Co., Providence, R. I.

Looms and Weaving Machinery.

American Supply Co., Providence, R. I.

Draper Co., Hopedale, Mass.

Fairmount Machine Co., Philadelphia, Pa.

Kilburn, Lincoln &amp; Co., Fall River, Mass.

Lowell Machine Shop, Boston, Mass.

Mason Machine Works, Taunton, Mass.

Tompkins, D. A., Co., Charlotte, N. C.

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Stetson Lumber Co., Macon, Ga.

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Chicago House Wrecking Co., Chicago, Ill.

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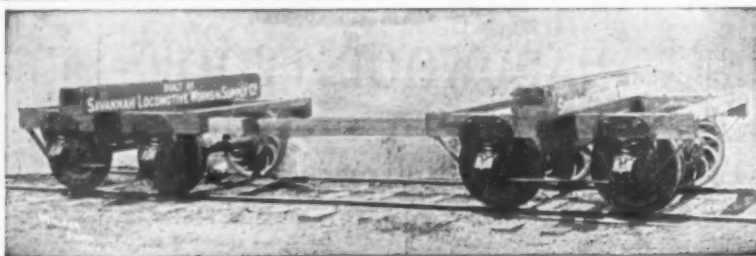
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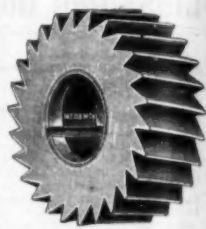
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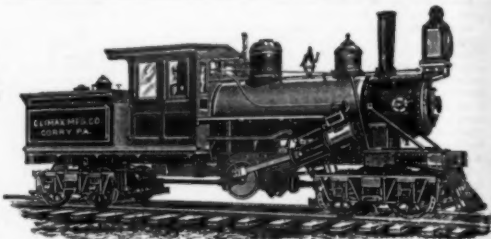
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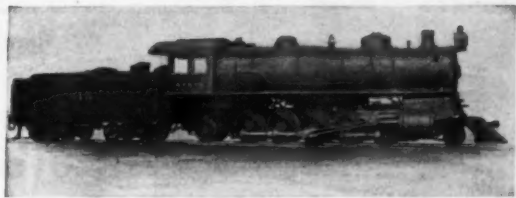
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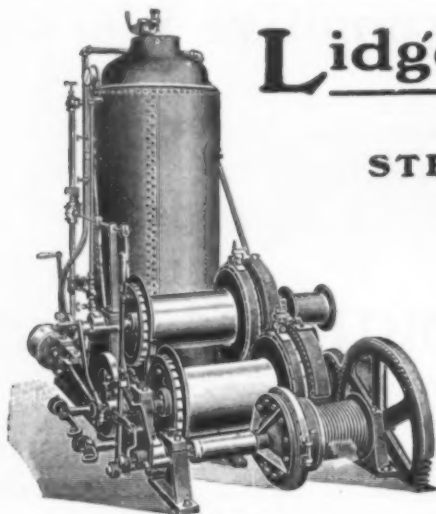
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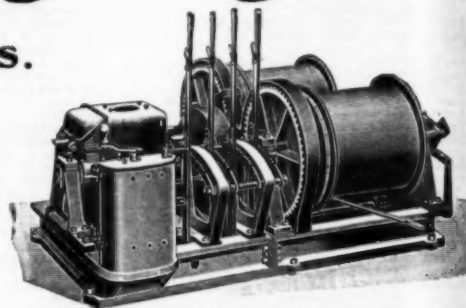
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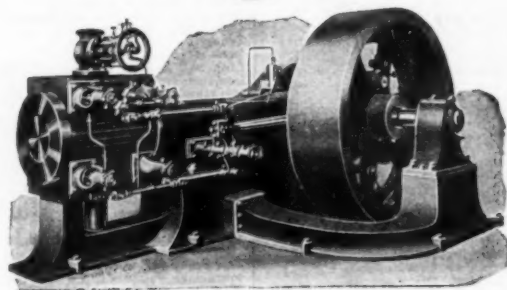
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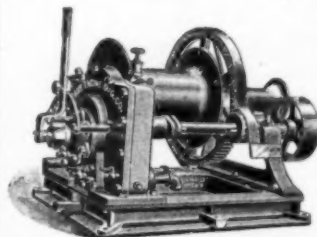
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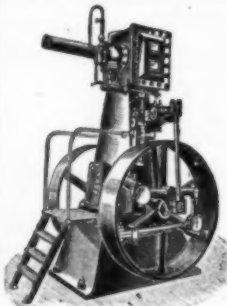
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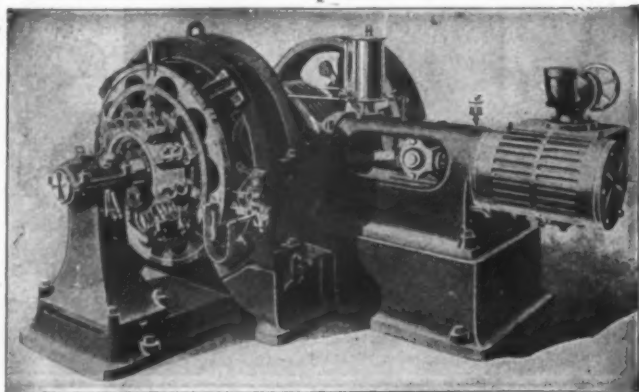
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**Shapers.**  
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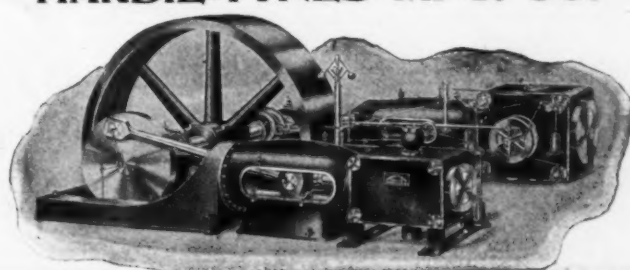
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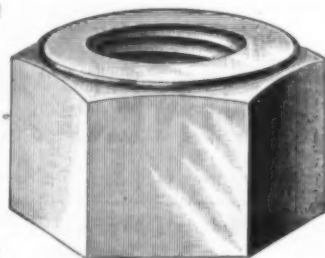
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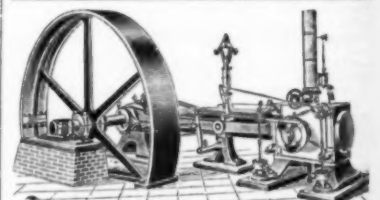
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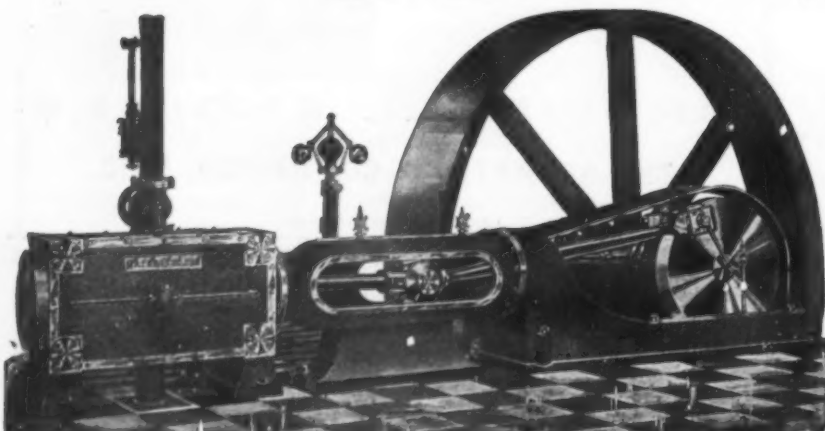
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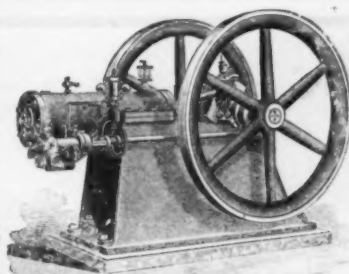
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 General Supply & Construction Co., New York, N. Y.  
 Passaic Steel Co., Paterson, N. J.  
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 Schreiber, L. & Sons Co., Cincinnati, O.  
 Va. Bridge & Iron Co., Roanoke, Va.  
**Steel Couplers.** (Automatic.)  
 Latrobe Steel & Coupler Co., Philadelphia, Pa.  
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 Westinghouse, Church, Kerr & Co., Pittsburgh, Pa.  
 Westinghouse Machine Co., Pittsburgh, Pa.  
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 Baltimore Fidelity Warehouse Co., Baltimore, Md.  
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 Chesapeake Iron Works, Baltimore, Md.  
 Easton Foundry & Machine Co., Easton, Pa.  
 Eureka Supply Co., Chattanooga, Tenn.  
 General Supply & Construction Co., New York, N. Y.  
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 Wesco Supply Co., St. Louis, Mo.  
 Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.  
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 Flint & Walling Mfg. Co., Kendallville, Ind.  
 Girard Boiler & Mfg. Co., Girard, O.  
 Hammond Iron Works, Warren, Pa.  
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 Harter Boiler Works, Montgomery, Ala.  
 Keeler Co. E., Williamsport, Pa.  
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 Means & Fulton Iron Works, Birmingham, Ala.  
 McGuffee & Kountz, Alliance, O.  
 Petroleum Iron Works Co., Washington, Pa.  
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 Scaife, W. B. & Sons Co., Pittsburgh, Pa.  
 Schofield, J. S. & Sons Co., Macon, Ga.  
 Smith Co. S. Morgan, York, Pa.  
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 Volk & Murdoch Iron Works, Charleston, S. C.  
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 Cypress Lumber Co., Apalachicola, Fla.  
 Davis, G. M. & Son, Palatka, Fla.  
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 Tupelo Tank Co., Mobile, Ala.  
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 Wesco Supply Co., St. Louis, Mo.  
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 Pomona Terra Cotta Co., Pomona, N. C.  
 Stevens, H. & Sons Co., Macon, Ga.  
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 Cardwell Machine Co., Richmond, Va.  
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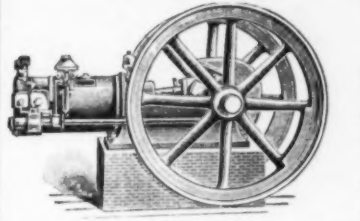


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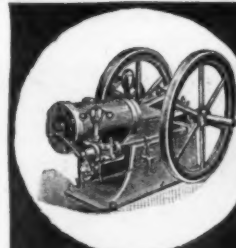
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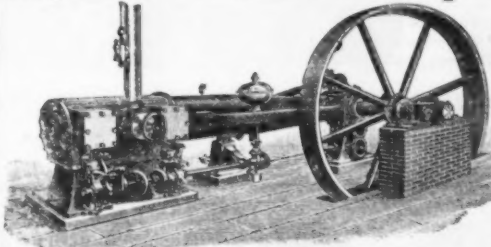


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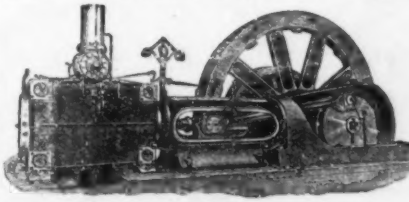
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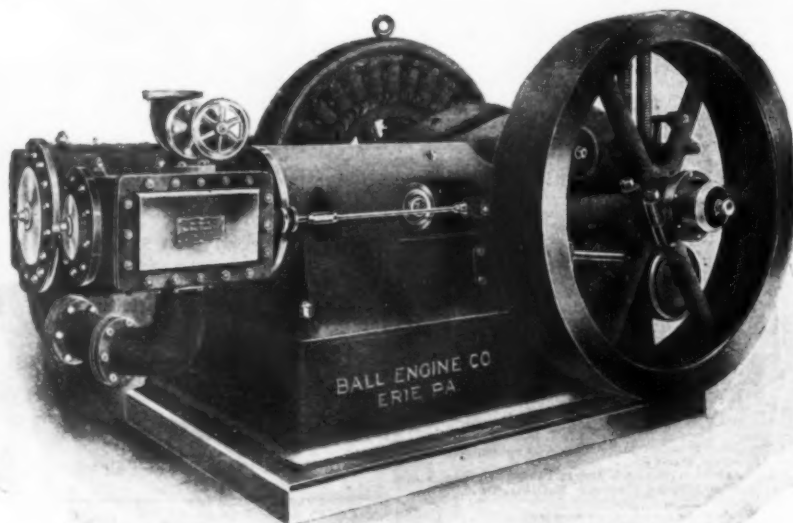
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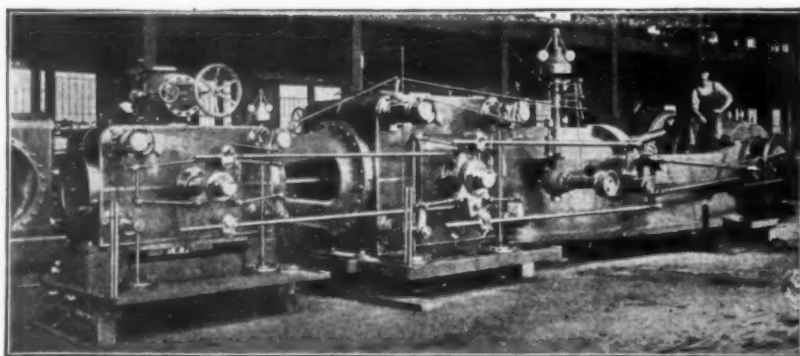
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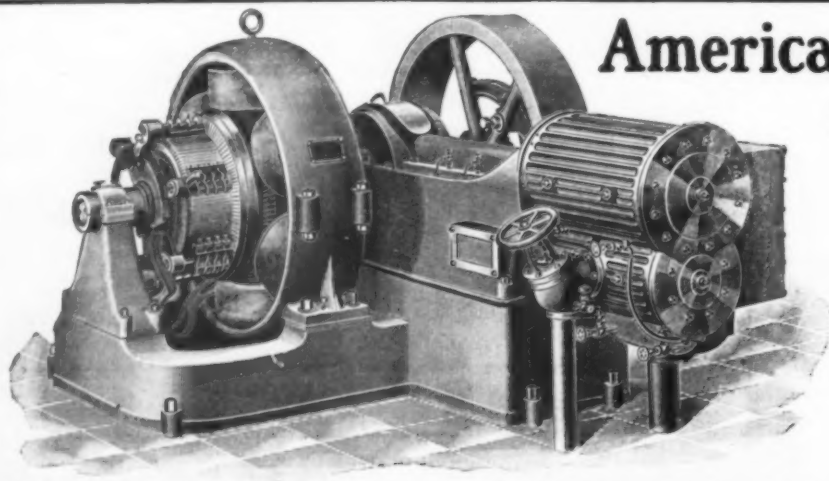
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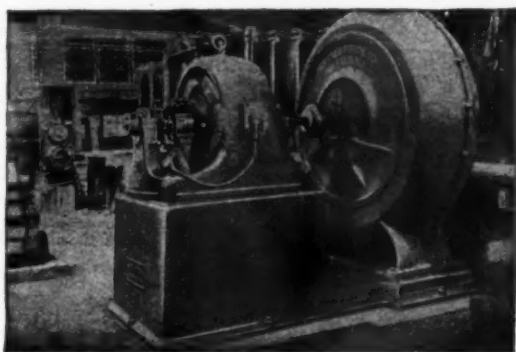
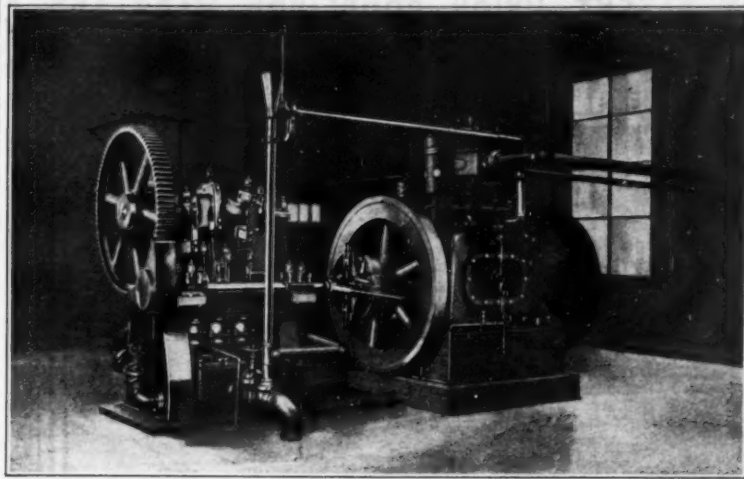
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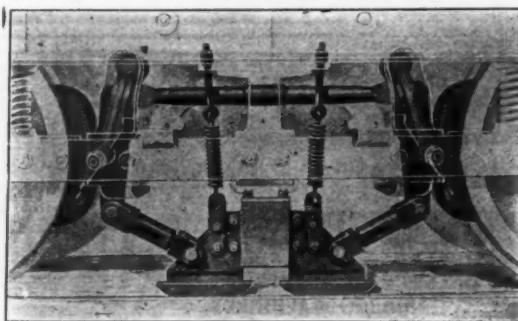
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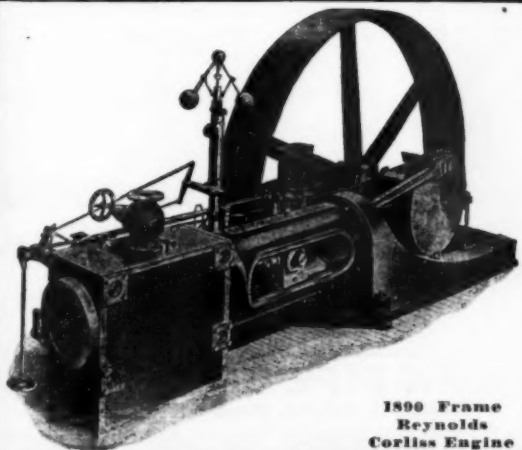
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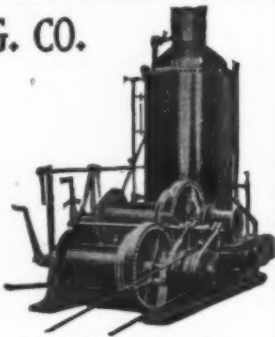
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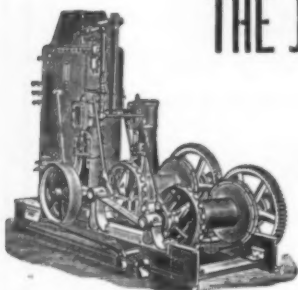
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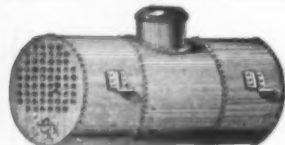
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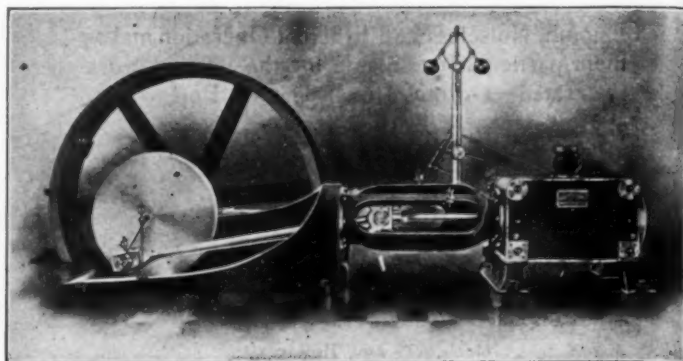


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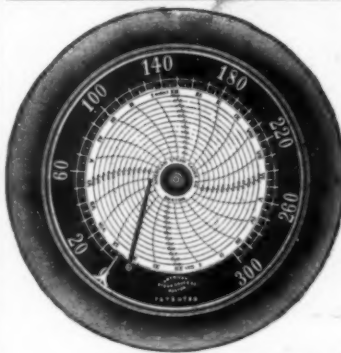
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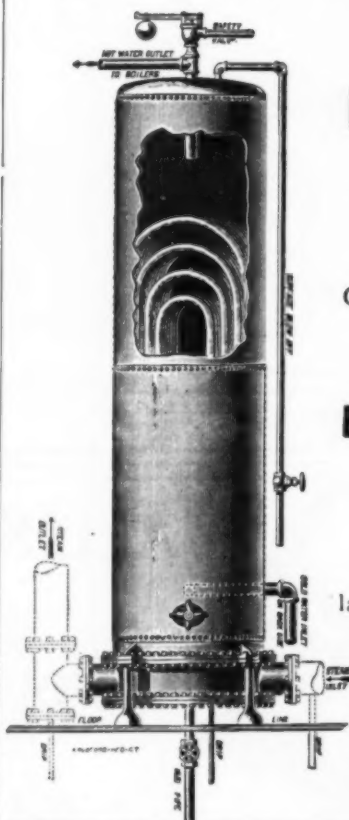
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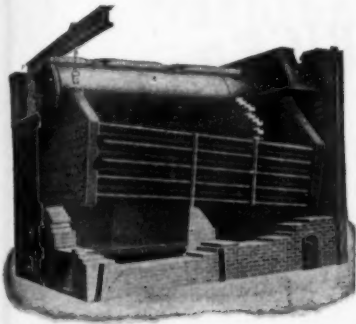


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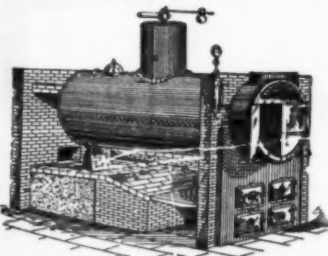
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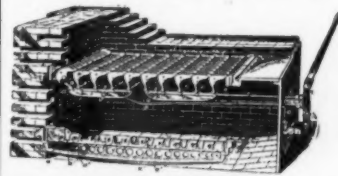
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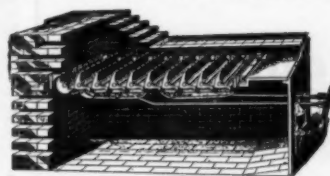
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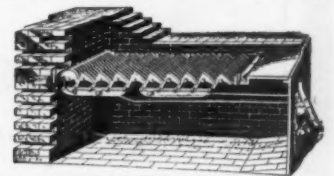
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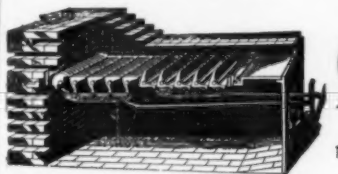
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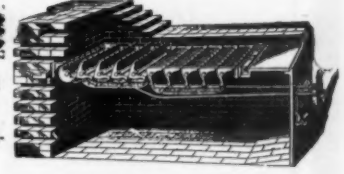
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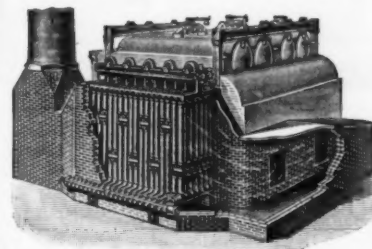
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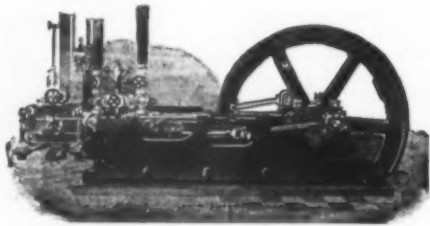
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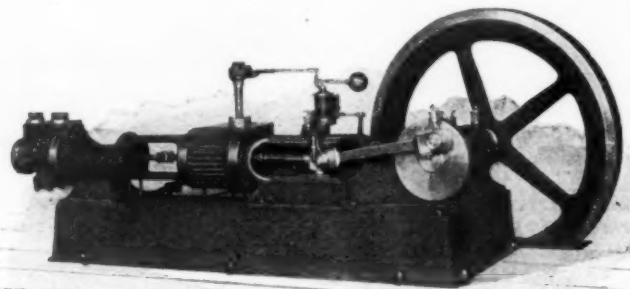
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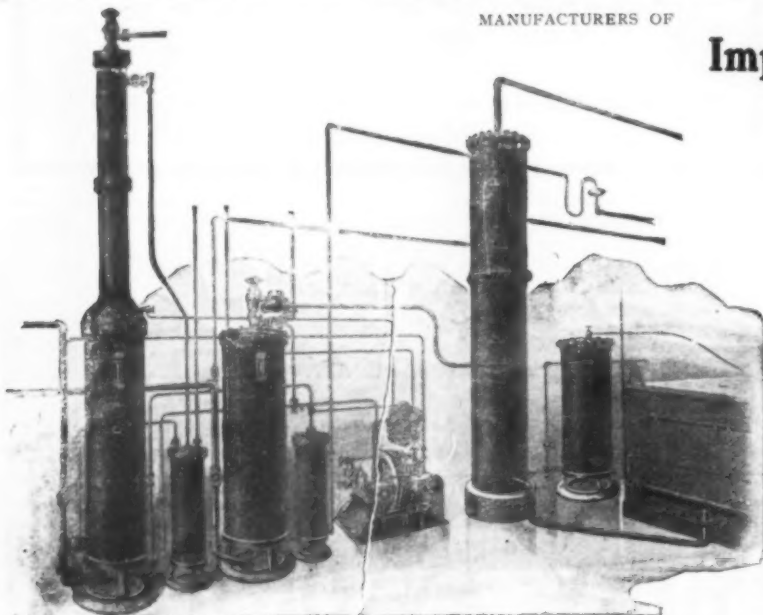
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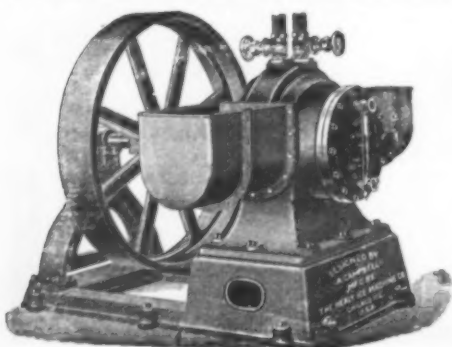
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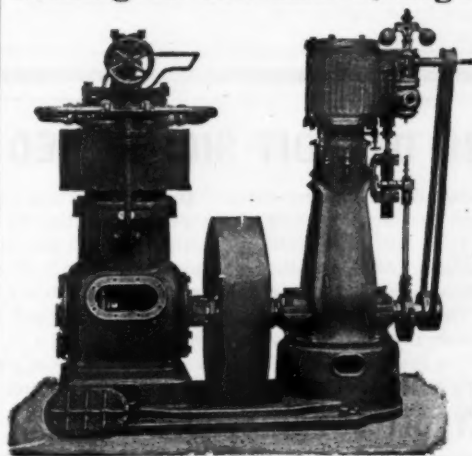
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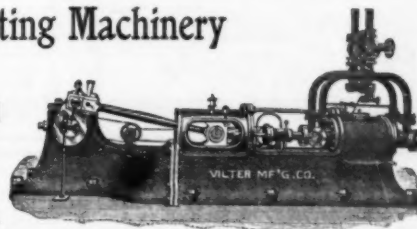
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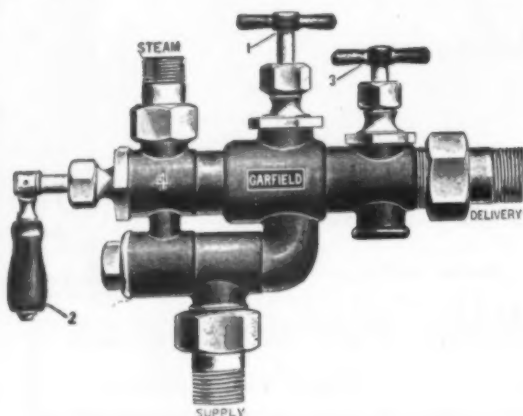
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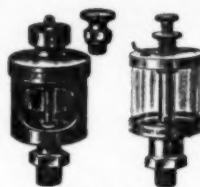
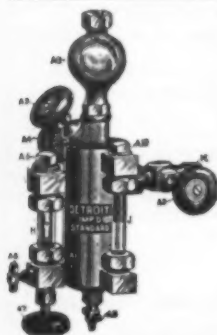
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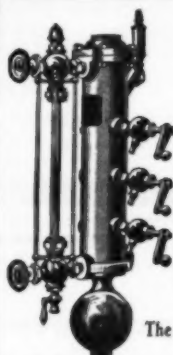
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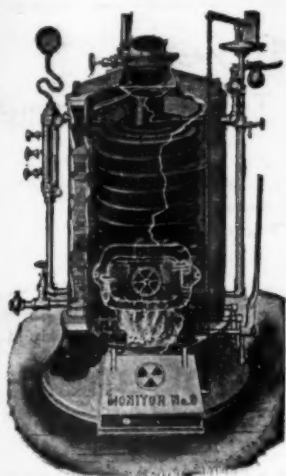
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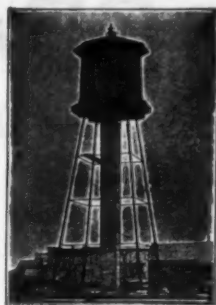
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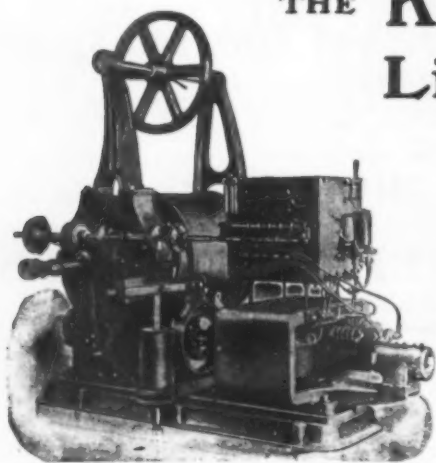
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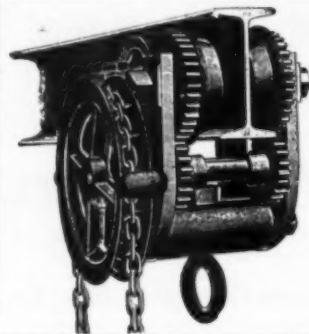
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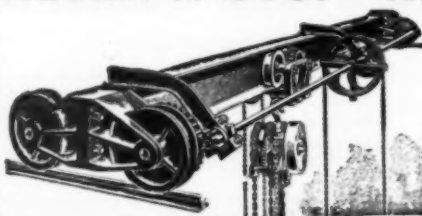
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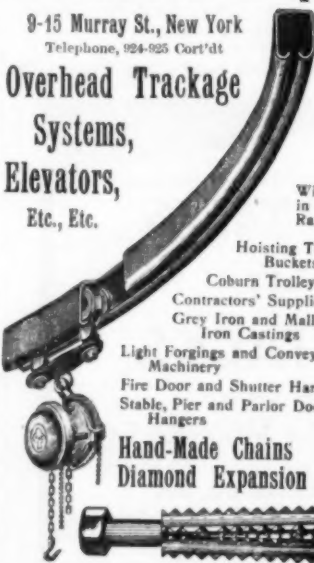
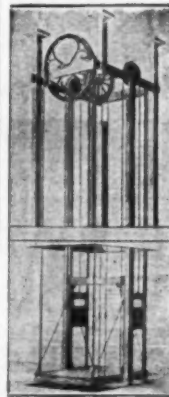
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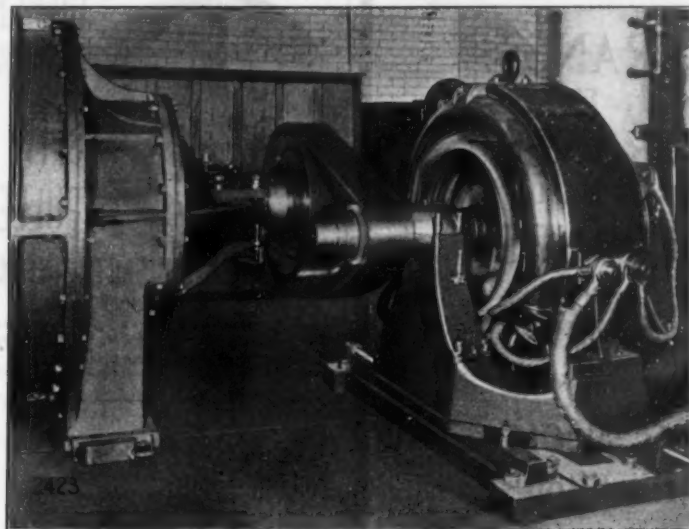


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are especially adapted to handling coal and ashes in large manufacturing plants.

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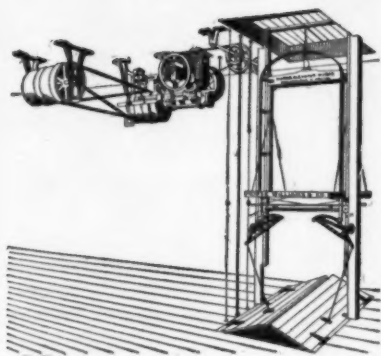
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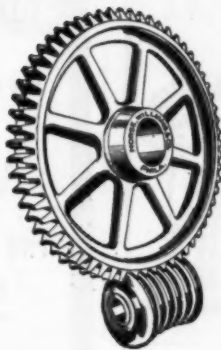
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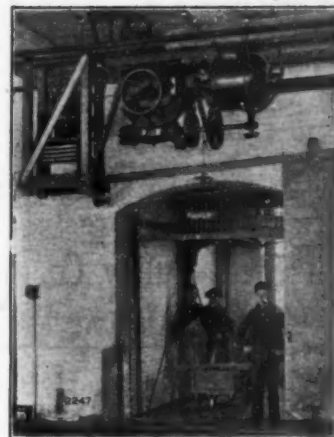
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Hindley Worm Gearing, the most efficient and the safest for Elevators. Used in the Morse Elevator.



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of the best features of the  
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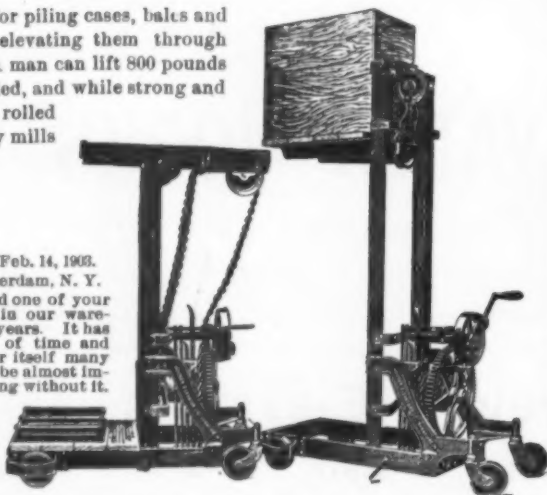
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a door or opening. A man can lift 800 pounds  
with it. Easily handled, and while strong and  
substantial, can be rolled  
around at will. Many mills  
are using them.

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times. In fact it would be almost im-  
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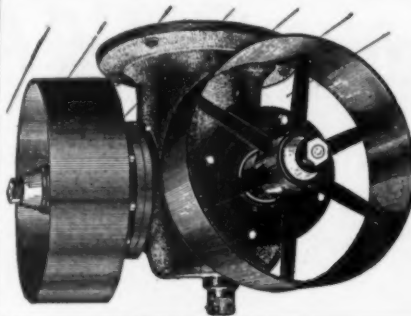
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TROY KNITTING CO.



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WITHOUT KNUCKLE JOINT.

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No more mule pulleys or bevel  
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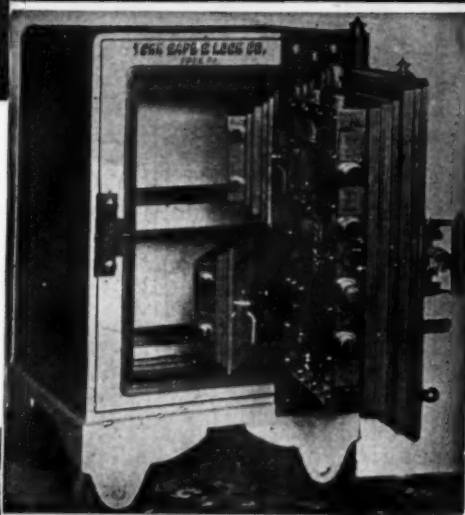
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lubricates the shaft when  
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also when it begins to stop,  
and does not feed oil while  
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Bushes require no oil or  
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afterwards. Will run per-  
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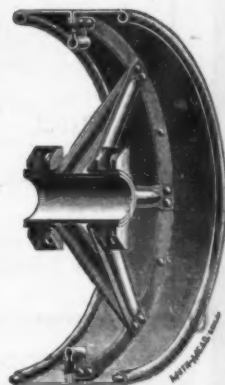
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| A Perfect PULLEY.         | Suits Everybody.        |

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### PACKING

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GUARANTEED  
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## PACKINGS

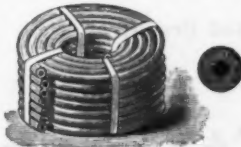


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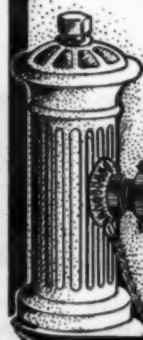
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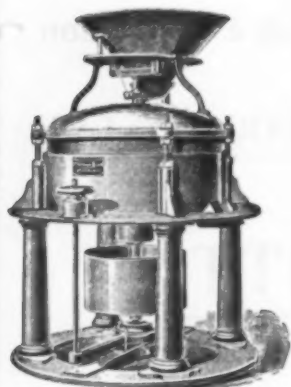
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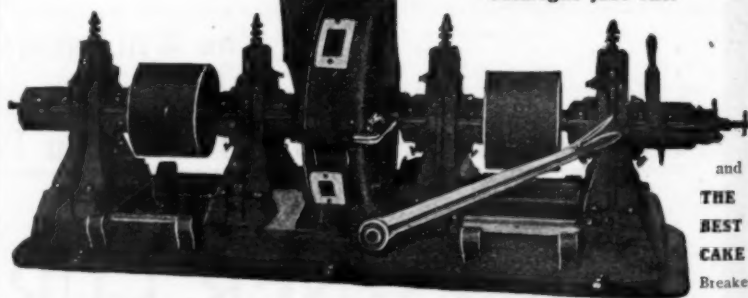
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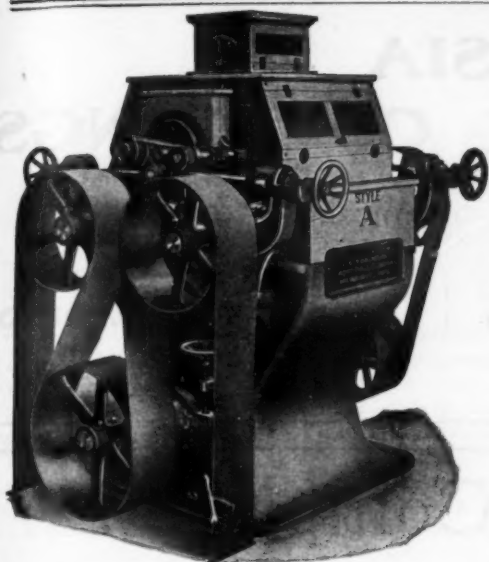
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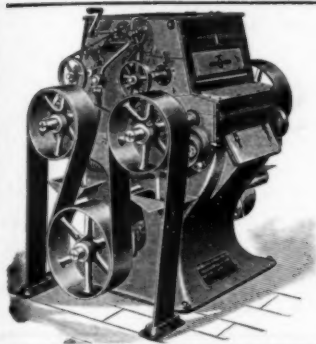
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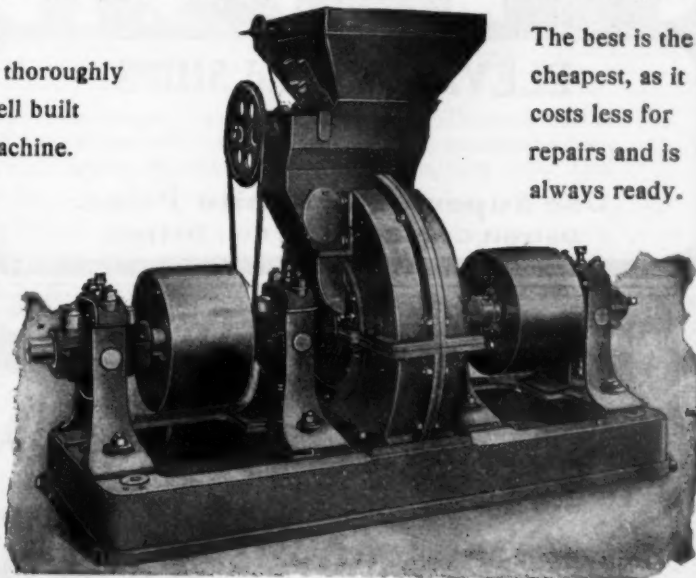
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## PAGE 60

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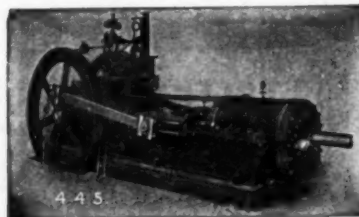
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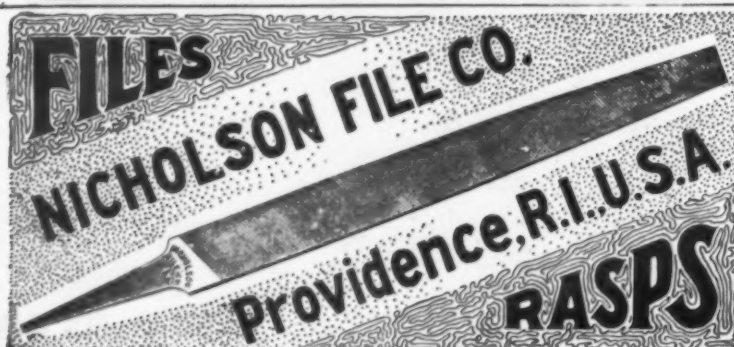
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# MANUFACTURERS' RECORD.

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER.

VOL. XLIV. No. 16.  
WEEKLY.

BALTIMORE, NOVEMBER 5, 1903.

\$4.00 A YEAR.  
SINGLE COPIES, 10 CENTS.

## Manufacturers' Record.

PUBLISHED EVERY THURSDAY BY THE  
Manufacturers' Record Publishing Co.

RICHARD H. EDMONDS, President.  
THOMAS P. GRASTY, Vice-President.  
FRANK GOULD, Secretary-Treasurer.

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RICHARD H. EDMONDS,  
Editor and General Manager.

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BALTIMORE, NOVEMBER 5, 1903.

### COPY FOR ADVERTISEMENTS.

Advertising copy (changes or new advertisements) should reach us Saturday Morning to insure insertion in the issue of the following week.

For the first issue in the month we should receive copy by Friday Morning of the week preceding.

THE DAILY BULLETIN of the Manufacturers' Record is published every business day in the year for the purpose of aiding manufacturers and business men generally who need to keep in daily touch with the new industrial, railroad and financial developments of the South and Southwest. Supplementing and in connection with the work of the Manufacturers' Record, it is an invaluable aid to all who are seeking business in the South and Southwest, the most wonderfully endowed section of America, where industrial, railroad and financial activity is creating an ever-widening market for machinery of all kinds, railroad equipment and building supplies, and for financial operations, etc., and where the knowledge and skill of the engineer and expert will find their largest field of operation.

The Daily Bulletin is intended simply to cover every day the work of the "Construction Department" of the Manufacturers' Record in reporting every new mining, manufacturing, railroad and financial enterprise organized in the South and Southwest, and it is not intended to be a general daily newspaper. To all who want to be advised every day of every new enterprise organized in that section it is invaluable.

### MAY SOLVE THE TIE PROBLEM.

Notwithstanding numerous discouragements, inventors who have devoted their energies towards the improvement of railway material and appliances have not ceased in their efforts to produce a thoroughly satisfactory substitute for wooden ties, the extraordinary increasing consumption of which has caused grave fears for the future. It is now reported that a steel company in New York has purchased all the patents and rights thereof for the manufacture of a steel tie, which, it is claimed, is so constructed as to be fully as serviceable as the old wooden tie, combining its good qualities with the durability of metal.

It is to be hoped that the claims and

expectations of those who are interested in the manufacture of this steel tie will be fully realized, for if success attends their efforts and the metal tie proves to be what railroads have been longing for, the great land transportation companies will be able to save many thousands of dollars annually, as well as avoiding the annoyance of constant renewals to an important part of their track. Various substances other than steel or wood have been used for the manufacture of railroad ties in an experimental way, but nothing has thus far proved so wholly satisfactory as the old-fashioned wooden tie, and notwithstanding that steel ties have been used in other countries for some years with more or less success, several of the important railroad companies in the United States have lately set out trees and gone into the business of cultivating timber in order to assure themselves of a supply of ties in the future. The annual consumption of about 125,000,000 ties emphasizes the necessity for devising some substitute for wood in this important feature of track construction.

Advertisements of Southern localities offering special advantages for the location of manufacturing enterprises will be found on pages 72 and 73.

### RAILROADS DEVELOPING THE SOUTH.

Two great transportation lines, the Southern Railway and the Illinois Central Railroad, which have for years been doing aggressive work for immigration of farmers to the South, have at the same time rendered effective service in attracting industries to that section and in strengthening those already in operation. The report of the industrial department of the Illinois Central shows that during the past fiscal year 206 industries, representing an investment of \$8,964,500 and giving employment to 10,416 persons, were established along its lines. Of these, seventy-four, with an investment of \$3,234,500 and employing 3596 persons, are on the lines of the Yazoo & Mississippi Valley road in the heart of the lower Mississippi. These skeleton figures for a year are but a part of the great record that the railroad has been making of late in developing the trucking industry and general farming and in building up manufacturing life along its lines as the basis of an ultimate transformation of a naturally rich portion of the country between the Ohio and the Gulf and drained immediately by the Mississippi.

Operating in a much wider area and amid a greater diversity of conditions, the Southern Railway has the record of the sale during the year of 2,270,018 acres of land contiguous to its line to 1093 farmers, and of 16,173 buildings of all kinds erected at a cost of \$26,508,233. In its territory investments in cotton-spinning and knitting mills, cottonseed-oil mills, gins and compresses, etc.,

equalled \$10,326,100, and in furnaces, coal mines, iron mines and other mineral developments \$6,470,900, and in woodworking plants \$5,816,700. An estimate by Mr. M. V. Richards, land and industrial agent of the company, makes the investments for expenditures for the year in the territory of the Southern Railway in enterprises of a public and

semi-public nature, as well as of an industrial character, at \$117,434,690.

These figures are records of distinct advance upon many lines, an advance to which the railroads have directly contributed, an advance which the railroads, with proper co-operation on the part of the people, may be expected to accelerate.

### NATIONAL IMPROVEMENT OF THE MISSISSIPPI.

Resolved, That safe communication between the Gulf of Mexico and the interior, afforded by the navigation of the Mississippi and Ohio rivers and their principal tributaries, is indispensable to the defense of the country in time of war, and essential also to its commerce.

Resolved, That the improvement and preservation of the navigation of those great rivers are objects as strictly national as any other preparation for the defense of the country, and that such improvements are deemed by this convention impracticable by the States or individual enterprise, and call for the appropriation of money for the same by the General Government.

Resolved, That the deepening of the mouth of the Mississippi so as to pass ships of the largest class, cost what it may, is a work worthy of the nation and would greatly promote the general prosperity.

Resolved, That the project of connecting the Mississippi river with the Lakes of the North by a ship canal, and thus with the Atlantic ocean, is a measure worthy of the enlightened consideration of Congress.

Resolved, That millions of acres of the public domain lying on the Mississippi river and its tributaries, now worthless for purposes of cultivation, might be reclaimed by throwing up embankments, so as to prevent overflow, and at this convention recommend such measures as may be deemed expedient to accomplish that object by a grant of said lands or an appropriation of money.

At first glance one might imagine that these are the resolutions adopted at last week's convention at New Orleans for the furtherance of the improvement of the Mississippi river under government auspices. But they are not. They were adopted at a convention held at Memphis, Tenn., in July, 1845—a convention as national in its scope and as thoroughly representative in its character as the one held at New Orleans on October 27, 1903. The meeting at Memphis was of about 600 delegates from Pennsylvania, Virginia, North Carolina, South Carolina, Mississippi, Louisiana, Texas, Arkansas, Tennessee, Iowa, Kentucky, Missouri, Indiana, Illinois, Alabama and Ohio. John C. Calhoun of South Carolina presided, and while reiterating his opposition, in accord with his views of the strict construction of the Constitution, to the conduct by the General Government of a system of internal improvement, his opinion on the subject of the improvement of the Mississippi river under federal auspices was strongly expressed in his opening address as follows:

In relation to the great highway of Western commerce at least, the great inland sea of the country—the Mississippi—he did not for a moment question that government was as much obligated to protect, defend and improve it in every particular as it was to conduct these operations on the Atlantic seaboard. It was the genius of our government, and what was to him its beautiful feature, that what individual enterprise could effect alone was to be left to individual enterprise; what a State and individuals could achieve together was left to the joint action of States and individuals; but what neither of these separately or conjointly were able to accomplish, that, and that only, was the province of the Federal Government. He thought this was the case in reference to the Mississippi river.

Nothing has happened since 1845 to weaken the force of those resolutions or to undermine the position of John C. Calhoun as to the national import of the Mississippi-river improvement. Developments have been but strengtheners of the opinions then set forth. They have increased the necessity for the improvement and have cultivated a stronger public opinion in favor of such improvement. That fact was most manifest at New Orleans last week, and it is deemed so significant and so far-reaching that the Manufacturers' Record proposes to publish as a special Supplement with its issue of November 19 the full stenographic report, including every address made, of the proceedings of the convention as a contribution toward the development of the great area of the United States to be affected directly and indirectly by comprehensive and standard work by the government upon the Mississippi and its tributaries. Arrangements have been made for a very wide circulation of this Supplement among leading business men of all classes throughout the entire Mississippi-valley territory, which extends from the Alleghany mountains on the east to the Rocky mountains on the west and from the Lakes on the north to the Gulf on the south.



# VAGARIES OF THE NEW YORK EVENING POST ABOUT THE SOUTH.

"Economic Aspects of the Southern Question" is the misleading title of a questioning and questionable editorial which, for some reason or other, the New York Evening Post has gone out of its way to print. The burden of the editorial is the negro. Hence the title is misleading, because with about 1,000,000 negroes living outside the South and more of them moving from it, he is a great deal more than a Southern question. The interrogative form of the editorial is questionable, because it carries assertions or suggestions which cannot be proved by facts. Even the positive statements are unsatisfactory, because they take practically no account of fundamental conditions antecedent to the situation which they picture.

The Evening Post says that the area embraced by South Carolina, Georgia, Florida, Alabama, Mississippi and Louisiana compares not meanly with some of the greatest countries of the world in extent and in agricultural, mineral, manufacturing and commercial possibilities, and that it has many diversities of surface, climate and natural product, mountains filled with coal, iron and limestone, great and valuable forests, vast water-powers, many navigable rivers and a coast line broken by a sufficiency of good harbors, and it adds:

Much progress has been made by these States in the last few years, but very little compared with what their natural advantages show may still be done.

All of which is true as a general proposition, but by no means justifying, of itself, the following:

What is the cause that has thus far held back this great and naturally rich section of the country? Its people have done and are doing much to develop its resources. Outside capital is eager to exploit its natural wealth. What, then, makes the prudent man hesitate to predict for it that magnificent future which would seem assured to it?

Who is the prudent man thus hesitating to predict for this area its magnificent future? If he exists outside the Evening Post's imagination, his prudence must be due to ignorance of the past and of the present, with the addition, perhaps, of prejudice nursed by editorials of the Evening Post. For his benefit a few facts may be presented.

In 1860 these six States, containing only 9.6 per cent. of the land area of the country and 13.8 per cent. of the population, possessed 18.3 per cent. of the wealth of the country. During the next twenty years their aggregate population increased but 40 per cent., while that of the rest of the country increased 62 per cent., and their wealth had fallen from \$2,970,000,000 to \$2,212,000,000, while that of the rest of the country had increased from \$13,189,000,000 to \$41,430,000,000. It is unnecessary to recall the causes of the revolution wrought in twenty years. Their record is scorched into the pages of American history. The story of the robbery and outrage during ten of those years of a prostrate people and of the demoralization of the negro race will ever remain a disgrace of American civilization and a warning for all persons except fools, fanatics or fiends against attempting to solve social and economic questions by brute force or by a priori theory. The figures alone reflect the material loss and the sapping of physical vitality out of which the six States reached 1880. What they have accomplished since then is a matter not so much of comparison with their potentialities in advantages of the resources of field, forest and mine, except as it gives convincing promise of the future,

as of wonder that even so much has been done.

A general indication of this doing is given in the increase between 1880 and 1900 in the assessed value of property in the six States from \$848,049,859 to \$1,469,266,719, which by 1902 reached \$1,615,625,299. Of course, changes in tax schedules and in methods of levying taxes may not permit absolute comparison of different years, but it is believed that the assessed valuation of the later years will be found to be a smaller proportion of the true value than in the earlier years. Figures offering a basis for comparison of values with the rest of the country are not available, but other comparisons, or perhaps it would be better to say contrasts, may be made for the last two census decades.

Only three of the States produce pig-iron, but their output grew from 93,314 long tons to 1,213,321, or 1200 per cent., while the total output of the United States increased from 3,835,191 tons to 13,789,242, or 259 per cent. In 1880 Alabama and Georgia produced 478,616 short tons of coal in a total of 71,481,569. In that year Alabama ranked fourteenth in production. By 1900 the two Southern States mined 8,709,832 short tons, an increase in twenty years of 1719 per cent. in a total of 269,881,827, an increase of 277 per cent., and Alabama had risen to fifth place in production. The bulk of the phosphate rock has been produced in Florida and South Carolina. Its mining increased in Florida from 3000 long tons in 1888, when it began, to 706,243 in 1900, while the production in South Carolina increased between 1880 and 1900 from 190,763 tons to 329,173, there being variations in the meanwhile, such as 541,645 tons in 1889 and 358,280 in 1897, due to influences not connected with the question under discussion.

In lumbering in the six States the capital increased from \$9,749,457 to \$82,378,901, or 748 per cent., while for the whole country it increased from \$181,186,122 to \$611,611,524, or 237 per cent., and the value of the products from \$16,301,721 to \$75,692,684, or 363 per cent., and for the whole country from \$233,268,729 to \$566,832,984, or 143 per cent., while the allied industry, the production of naval stores, representing now more than \$19,000,000, also advanced considerably.

In cotton manufacturing the capital increased from \$11,699,397 to \$77,329,621, or 566 per cent., and for the whole country from \$208,280,346 to \$467,240,157, or 124 per cent., and the value of products increased from \$11,396,551 to \$57,894,800, or 411 per cent., and for the rest of the country from \$192,090,110 to \$339,200,320, or 76 per cent.

There has been something of an investment, by no means confined to Southern money, in railroad construction during the twenty years, the mileage in the six States increasing from 8026 to 21,837, or 172 per cent., and in the whole country from 92,296 to 194,334, or 110 per cent. The increase in mileage represents at a fair estimate at least \$350,000,000 invested in the six States.

In general agriculture the advance has not been what, under normal conditions, might have been expected. The value of farm property increased from \$560,458,613 to \$1,018,052,675, or 81 per cent., and in the whole country from \$12,180,501,538 to \$20,439,900,164, or 67 per cent., and the value of farm products from \$279,034,793 to \$457,427,486, or 64 per cent., and in the whole country from \$2,212,540,927 to \$4,717,069,973, or 113 per cent.

One of the reasons, but only one, for this disparity is revealed in the figures of manufacturing. In that the capital increased from \$60,947,060 to \$409,515,392, or 572 per cent., and in the whole country from \$2,790,272,606 to \$9,831,486,500, or 252 per cent., and the value of the products from \$104,014,393 to \$444,568,019, or 327 per cent., and in the whole country from \$5,369,579,191 to \$13,010,036,514, or 142 per cent.

As a matter of fact, the expansion in manufacturing, together with the extension of railroads, has diverted thousands from agriculture, while the increase in population has not been sufficient to meet the full demands, either of agriculture or manufacturing. Population, now averaging only about thirty to the square mile, was scant enough in 1800, and in the subsequent twenty-five or thirty years its circumstances were not such as to attract others from outside, or even to retain its natural increase. In the past twenty years its aggregate white and negro population increased from 6,137,357 to 8,842,003, or only 44 per cent., while the population of the whole country increased from 49,983,763 to 75,643,190, or 51 per cent. In the six States the white population increased from 2,947,153 to 4,408,398, or 49 per cent., and the negro population from 3,190,204 to 4,433,605, or 39 per cent.

In these figures of the population the Evening Post seeks by implication to discover the answer to its straw questions, for it says:

Human nature being what it is, a community in which the population is divided not very unequally between two distinct races is, other things being equal, at a disadvantage as compared with another in which there is no such division.

Facts of 1860 suggest the fallacy of this theory as far as the six particular States are concerned, those six States, be it remembered, constituting but about one-third of the total area of the South and containing about the same proportion of its population. But the Evening Post, not bothering itself with facts, suddenly branches out, without warning, to the whole South, to which its arguments are even less applicable, and advances the following assumptions bordering closely upon the ridiculous:

It is easy for one race of people to push down another, and there are many ways of doing it. There is only one way to reverse the process, and in that no one outside of the race which is struggling upwards can be of much help, although it is easy to hinder. Climbing up is a slow and painful process. If a whole race is to be elevated there must be many weary workers slowly and doggedly forcing their way on. Whether they will attempt to depends upon whether, in their view, the prizes which await them at the top are worth the effort to get there. The future prospects of the South in a great degree depend upon its negro population, now in large measure thriftless, immoral and unenlightened, but becoming industrious, virtuous and intelligent. It is going to be very hard for these negroes so to elevate themselves. Can the South afford to say to them: "Strive as you choose, succeed as you can; but, whatever you do, so long as there is a discernible drop of African blood in your veins you shall never be allowed to obtain many of those things which men of all races and in all ages have most keenly longed for."

Who is responsible for the thriftlessness, immorality and unenlightenment of the negro of today? Certainly not the South, except in so far as it has persisted in support of methods of false training of the negro, forced upon it at a time when the negro, fresh from the plantation, was responsible for its legislation and constitution making.

Who is trying to push down the negro race? Certainly not the South, if the accumulation of property by the negroes there, well indicated by an increase in

the assessed value of his holdings in Georgia alone from \$5,182,398 in 1879 to \$15,188,069 in 1902, is a token.

What are "those things which men of all races and in all ages have most keenly longed for?" Is one of them amalgamation? The yellow race is a living denial of such a thing, the Jew among the Semites being, perhaps, most notable as the maintainer of race integrity. It is denied also in diminished degree even among peoples of the same stock, whether Semitic or Caucasian, and by both races in their relations with the African, however exceptional the conduct of degenerates may be.

Is one of them the suffrage? After more than a hundred years of the suffrage, more or less restricted, especially in the earlier half of the century, hardly 70 per cent. of the Caucasian people who have developed the suffrage most thoroughly vote in a national election. Yet a minority of that people at a time when they themselves were restricted at the polls forced the suffrage upon the negro, thoroughly incompetent for citizenship, and even today, with the horrors of that crime confronting them, still contend through the columns of such papers as the Evening Post against a correction of the evil.

Is one of them education? If by education is meant the enjoyment of attendance upon schools and the acquisition of book learning, it is something that only a comparatively few men of most of the races have most keenly longed for in a recent age. In its American development it has become a confusion of means with the end, and it is not surprising, in view of its exaggerated importance impressed upon the inferior intellect of the negro, that he has substituted it for the fetish of the jungle, and, figuratively speaking, imagines it placing him again beneath his native bread-fruit tree. In this particular the South can hardly be charged with neglecting the negro. For between 1871 and 1901 it spent out of its poverty more than \$121,000,000 for negro schools and pushed down the illiteracy of that race from 75.6 per cent. to 48 per cent. in twenty years. If that reduction of illiteracy and that expenditure for schools has contributed toward pushing down the negro, as not a few thinking persons are inclined to believe; if that money and that energy have been wasted upon false training of the negro, the South cannot be held responsible. It has really not been a free agent, and to some extent has been misled by a few of its own men making a living in "educational philanthropy."

Is one of these longed-for things possession of the opportunity to accumulate property by honest work? That longing is absent from the African race of all ages and of all lands except where it has been brought in close contact with a superior race, and even there the desire has ever been weak among the mass. Nevertheless, the fact remains that in the South such opportunity for the negro has been greater than anywhere else in the world, and during the past twenty years greater than in any other period of history. So the South has not been pushing down the negro in that respect.

Whether the failure to "push down," in the Evening Post's conception, has not been detrimental to the South is another question. If attempts had not been made forty years ago to elevate the negro in lightning speed and upon the false premise that he was merely a Caucasian with a black skin, it cannot be doubted that his material advancement would have contributed much more to



the material advancement of the South than it has done. As it has been, the whites of the South have made their wonderful progress in spite of their being compelled by outside pressure to drag the negro into paths for which he was unsuited, thus hampering both themselves and the negro. Out of a bitter experience has come wisdom for them and for the mass of whites in the country, and the determination to free the negro as quickly as possible from harassing interference and to give him the opportunities to develop as his qualifications permit, the only safe course in race growth.

The future prospects of the South do not depend upon the negro to as great a degree as the Evening Post would have one believe. Capital and white population are flowing into the South with ever-increasing force. The negro is leaving the South in ever-increasing numbers. About 1,000,000 negroes already live outside the South, and wherever they congregate they are valuable aids for the country in counteracting the false and injurious teachings of such papers as the Evening Post. They contribute toward the growth of a public opinion that the less said about the negro from a theoretical standpoint the less important the negro will be as a drag upon the South, and, consequently, upon the whole country.

Only idiocy or malignancy can continue to view the negro from the standpoint which made possible the mistakes and crimes against him of forty years ago. Only a purpose to prevent the full realization of Southern possibilities can inspire such editorials as the one quoted from the New York Evening Post.

#### COTTON JEREMIAHS DISCOUNTED

Referring to the cotton trade at that time, President Herbert E. Walmsley, in his address before the New England Cotton Manufacturers' Association on September 30, said:

It is a deplorable circumstance that the pernicious practice of cornering such a necessary staple as cotton should be possible, demoralizing and paralyzing for the time being an industry of such immense wealth to individuals and to the nation as that of cotton manufacturing, throwing out of employment and reducing to the verge of starvation the thousands of families whose very existence is dependent upon the continued and steady operation of the factories where they find employment.

On October 31, just one month later, the Commercial Bulletin of Boston said:

Those cotton mills, both at the North and South, which were shut down for the want of raw material are now nearly all running. The present outlook is for a good, steady business for the manufacturers throughout the coming season. Stocks in first hands, as a rule, are now under good control, some accumulations having been removed. Owing to the enhanced cost of cotton, manufacturers are convinced that they must get more for their product, and are accordingly turning down many orders at old prices. Buyers realize that eventually they will probably have to meet the situation by making better offers, but for the time being are pursuing the policy of holding off from the market, or at least seeking for any soft spots in it.

The mill curtailments of the summer were so arranged as to intervals and came at such a comparatively favorable time that no severe suffering was entailed upon the operatives. By running many of the mills alternately or on part time the help was generally kept from scattering, and the mild season of the year readily gave opportunity to secure temporary outside occupation. The mills are now running along on full time, and remarkable harmony is the prevailing condition between the employer and the employed. . . . Certainly all engaged in the cotton-manufacturing industries of our country have reason for thanksgiving that the evils of the temporary scarcity of the staple have been so comparatively short and light.

Leaving President Walmsley and the Commercial Bulletin to harmonize their

apparently dissimilar views regarding conditions resulting from the "corner" in the cotton market, a word or two should be said about the attitude toward that "corner" of Secretary Wilson of the National Department of Agriculture, whose mislead President Walmsley followed. It will be recalled that on August 20, about the time that the new crop of cotton usually begins to move, he was quoted as follows:

The manufacturer found it more profitable to sell his cotton to the gamblers. Mills were closed down because of their being no raw material left, and in some instances cotton which was sold to European manufacturers has been brought back to this country and used in the gambling operations.

This was followed by suggestive allusions to the great encouragement given by high-price cotton to other peoples in Africa and Asia to increase cotton production—suggestions on a par with those which have been regularly published to the country through government channels whenever in recent years the price of cotton has risen notably. The interview concluded as follows:

Mr. Wilson said the prospect of the present crop had nothing whatever to do with the operations of the speculators. The shortage of raw cotton to the manufacturer, he declared, is not due to shortage in the crop, but to the fact that the corner in cotton has put the price of the raw material to a point where the manufacturer cannot profitably use it. The producer has not profited by these high prices, as the cotton practically is all out of his hands. In conclusion, Secretary Wilson said he saw no prospect of relief for the workmen who are thrown out of employment by the mills closing down because of the scarcity of raw cotton until the corner in cotton bursts and the price of the raw material is reduced. The new crop of cotton will soon begin to come in. "Of course," he said, "the corner can continue if the gamblers have enough money to buy in the new crop."

However the publications of the Agricultural Department may have been used in the past to influence the markets, this remarkable interview of Secretary Wilson was, it is believed, the first of its kind. Never before had the weight of the utterances of such an executive officer been thrown upon any market for the producers of the country at such an acute moment. It was thought that in view of the developments of the past month or two in the cotton market, discounting pretty thoroughly the position of the Secretary of Agriculture, he would make his appearance at the levee convention at New Orleans the occasion for an apology, certainly to the farmers of the South, and of a consequent assurance to the producers of the whole country that never again would the Agricultural Department be placed in a position so detrimental to their interests. As the apology and the assurance were not forthcoming, it only remains for everybody interested in the crops of the country to disregard whatever may be given out from government sources regarding their prospects and to adopt the attitude of Mr. Frank B. Hayne, one of the cotton bulls, who, in an elaborate review of the bull movement, wrote:

The most outrageous and unwarranted criticism, however, of the so-called New Orleans bull clique came from the Secretary of Agriculture. Mr. Wilson, a Cabinet officer. Never mind what anyone's individual views were regarding these transactions, I consider that every good American citizen should have felt outraged by a government officer in his official capacity denouncing private citizens in carrying on their business. Secretary Wilson showed such complete ignorance of the subject, however, that his remarks are hardly worth answering. Dollar wheat and 75-cent corn, in his opinion, are quite legitimate, but he seems to think that for the Southern planter to receive twelve cents for his cotton is an outrage.

The point to be borne in mind by

wheat-growers and corn-growers and tobacco-growers and cattle-raisers—in fact, by the hundreds of thousands of persons making their living in agriculture in all parts of the country—is not so much this particular lack of propriety as the possibility that a Secretary of Agriculture may make it the precedent for other mistakes in criticisms affecting disastrously the immediate interests of millions of American citizens. What a power such criticisms might be made preliminary to a national political campaign!

#### NO CAUSE FOR ALARM.

The Charleston News and Courier has been unnecessarily moved by divers figures embodied in a fragment of the literature of the Southern Education Scheme, in reality one of the phases of the movement for a revival of the pernicious demand that the general government shall appropriate vast sums of money for negro schools in the South. It quotes from an address in which the statement is made that there are 54,000 white illiterates in South Carolina, and containing other assertions of like tenor, the intent of which is by no means concealed in certain patronizing compliments of the illiterates. The Charleston paper, recalling that the normal vote of South Carolina is about 100,000, and reverting to the statement that there are 54,000 white illiterates in the State, says:

The figures are out of all proportion to what they should be. That there is a sufficient reason for this large percentage of ignorance we do not believe. There is scarcely a neighborhood in the length and breadth of the State that has not a school of some kind. In many instances the education facilities which are afforded are of the most meagre and inadequate character, but they are surely sufficient to battle successfully against actual illiteracy.

For the peace of mind of the News and Courier it may be well to state that the figures of the Southern Education Scheme still fall far short of the requirements of genuine statistics. As set forth in the promotion of the Southern Education Scheme figures are usually out of proportion. Take those referring to South Carolina and handle them from the point of view of individuals who use figures solely for the discovery of truth. As a matter of fact, the census of 1900 showed that there were 54,719 white illiterates ten years of age and upward in that State. Of these, however, but 15,865 are of voting age, the illiteracy of that class of voters having fallen from 16 per cent. in 1880 to 12.1 per cent. in 1900. There has been a reduction during the same period in the total illiteracy among whites from 21.9 per cent. to 13.5 per cent., while the more marked change among children of school age indicates that South Carolina in the matter of reducing the illiteracy of the future voters is fairly holding its own, considering its success in bearing such burdens as the reduction of its negro illiteracy in twenty years from 78.5 per cent. to 52.8 per cent., and in comparison with other parts of the country. For example, the white illiterates of Massachusetts numbered 130,321 in 1900, of whom 51,785 were of voting age, while those of New York numbered 305,773, of whom 124,217 were of voting age, and the 113,675 illiterates of voting age in New England in 1900 are the mark that illiteracy in that class has increased during the past twenty years more rapidly than the population of voting age. This, of course, is due to foreign immigration, as other figures would prove, but the bald statement shows that almost any desired impression may be

created by the use of figures provided only selected figures are used and other figures are neglected. Such selection and such neglect seems to be the policy of the Southern Education Scheme, a result, apparently, of having the mind intent upon one point. As long as it prevails no figures emanating from that quarter are fit to be considered seriously.

#### INROADS UPON TIMBER.

Mr. L. D. King of Gifford, Ark., connected with the lumber business there, is quoted at Memphis as stating that the forests of Arkansas, once deemed almost inexhaustible, are being rapidly depleted, and that the supply in many parts of the State will last but a few years. Mr. Charles Van Pelt, a lumberman of Seattle, Wash., is quoted at Kansas City as belittling fears that the lumber supply of this country will give out in forty or fifty years, and as expressing the conviction that the lumber fields of North America will produce enough to meet all demands for the next hundred years. Referring to the prophecies of twenty years ago about Michigan that its timber would be cut out before now, Mr. Van Pelt said that there is still a sufficient quantity to meet all demands, but that wasteful methods of handling it have come to an end. Regardless of Mr. King's apprehension and of Mr. Van Pelt's optimism, the policy adopted in Michigan, according to the latter, is the one to be pursued in Washington, in Arkansas, in Louisiana, in Texas, in the Carolinas or in the Virginias—in fact, in any State where the timber supply has not been exhausted. As has been pointed out time and again, lumbering operations have been carried on in this country upon the principle that with exhaustion of one field the mills could be moved to another. Forests have been handled somewhat as mines in a purpose to get all out of them as quickly as possible. But reason is beginning to assert itself, and just as economics have perforce been introduced into mining, so scientific lumbering is coming to the front. Modern methods mean that there will be no waste in cutting and no unnecessary heedless destruction of younger growths. Moreover, intelligent consideration of the relation of forests to climatic conditions is leading to the absolute preservation of great areas of timber and plans for the reforestation of other areas. All of which is upon right lines and for the ultimate benefit of lumbermen and consumers of lumber of the future.

#### BUILDING UP ONE'S TOWN.

For an illustration of the self-evident proposition that a town is exactly what a people makes it the Galveston News points to Itasca, of less than 1500 population, and says:

"It has built a cotton mill, it has secured two railroads, and, in fact, has never failed to do whatever it started out to do to make itself a good place to live in and to transact business in. The newspaper there is full of advertisements of local merchants, and whatever comes from the place or is seen about the place has the color of prosperity on it. Who did it but the Itasca people?"

To do that the Itasca people displayed courage and energy. What Itasca has done is possible for hundreds of other communities in the South no whit larger and for many others more nearly approaching the populations of cities. An individual depending entirely upon help outside himself for his advancement will never amount to anything of value to himself or his fellows. It is nothing dif-



ferent in case of a community. A town or city waiting for invigorating capital or population from elsewhere is not likely to be invigorated, but, on the contrary, is pretty certain to be left far in the rear by more enterprising communities. The very effort to progress of itself gives a town strength and encourages co-operation from outside.

#### BANKING FACILITIES EXTENDING.

The rapid extension of banking facilities in the South and Southwest is in great measure shown by the latest bulletin from the office of the comptroller of the currency. Since the passage of the act about three and one-half years ago authorizing the incorporation of national banks with a minimum capital of \$25,000 there have been organized in those sections 620 national banks, of which number 400 were of less than \$50,000 capital, the remainder being of \$50,000 or more capital. Texas leads all States in the country except Pennsylvania, with a total of 193 new banks, or only sixteen less than the total of the Keystone State. A considerable number of banks have also been organized in Oklahoma and the Indian Territory, the total for those two Territories being 155. It must be remembered that these figures do not include the large number of State banks that have been organized, a number which is constantly being added to in order to meet the demands and requirements of different localities.

#### SMALL HOLDINGS OF STOCK.

During the past year the number of stockholders of the Illinois Central Railway Co. increased from 7128 to 8647. Of a total capital stock issue in 1902 of \$95,038,400 there were \$13,152,000 belonging to 5599 persons owning less than 100 shares. In 1903 stock amounting to \$15,947,000 is owned by 6728 persons, indicating that the increase in the total number of stockholders has come from small investors. One-third of the total number of stockholders live in the twelve States in which the company operates, and 1324 of them live in Illinois, the company's home. How these figures compare with stockholding figures of other railroad lines it would be difficult to determine, but they reveal a healthy condition for the Illinois Central and its territory probably unexcelled in this respect in the country.

#### NARROWER RANGE OF PRICES.

##### Settling of Values in the Birmingham Market.

[Special Cor. Manufacturers' Record.]  
Birmingham, Ala., November 2.

The iron market the past week showed a narrower range of prices, as there was a settling down of values towards the inside figures. Business was improved and developed an increase in the number of orders as well as in their volume. Some important interests were added to the ranks of buyers, and several orders ranging from 4000 tons down to 1000 tons were registered. While not what could be termed active, the buying was very fair, and about equal to current make. Some think it was more. More sales were booked around \$10 than any other value obtained. There were orders that ran the gamut of prices up to \$10.75, basis of No. 2 foundry, depending upon the surrounding circumstances. There was a constant procession of these orders the entire week, ranging in volume from 1000 tons to single car lots. All these latter demanded prompt shipment, and this demand it was often impossible to meet.

The car-shortage evil is beginning to be felt here. A leading interest on an order for 100 cars obtained fifteen of them. An-

other interest received an acceptable order, shipment to be prompt. It was accepted, shipment within three weeks. And it isn't likely that there will be any easing up soon of this condition of affairs. The same conditions exist as to the coal interests.

Some No. 1 foundry sold at \$10.75 and some went at \$10.50, but only in small lots. There were sales of gray forge at \$8.75 and \$9, and of No. 3 foundry at \$9.50 and \$9.75. The major part of these sales made were for delivery the remainder of this year. But there was a very fair inquiry for delivery the first half of next year. Some was sold, but only to a limited extent, and the price paid is said to have been \$10.25. As a rule, sellers are opposed to contracting for that delivery, and some are refusing to name prices. Others are pricing only to those buyers who are already registered for delivery the balance of this year. There were several bids of \$10 declined, as holders of iron have faith in the recovery of values. We are down now to the cost line with the majority of furnaces, and sellers will not submit to lower prices without a vigorous fight to maintain at least what now exists.

As to the export trade, there is nothing to say of a definite character. There is an interchange daily of cablegrams, but so far they have led to no business. But we are so near together that we are bound to come to business. We are within fifty cents of acceptable price. The freight ranges from \$3.50 to \$2.50, and all the vessels prefer iron as a ballast to any other they can get. The story circulated to the effect that a pool has been formed to dump 50,000 tons on foreign markets at current values and thus reduce stocks is a figment of the imagination.

The pipe works report a quiet time, but this is a season when they are not rushed. Quotations are given with the caution added that favorable circumstances are a factor that sellers consider. Four-inch pipe is quoted at \$25, 6-inch at \$24, 8-inch, 10-inch and 12-inch at \$23.50, while 14-inch, 18-inch and 20-inch are \$22.50, and 24 and 30-inch pipe are \$22. Business with the shops is yet good, but there is lacking the rush that but a short time back characterized them. There is enough of unfinished work on hand to keep them going the balance of this year, but new business has now to be wooed. It is not coming unsolicited.

Among the incorporations of the past week are the North Alabama Stone Co., capitalized at \$25,000, the incorporators being ex-Governor J. F. Johnston, W. C. Shackelford and Jos. V. Allen; the Traders' National Bank, with a capital of \$100,000; the Underwriters Real Estate & Rental Co., capitalized at \$100,000, and representing the consolidation of three firms acting heretofore as separate interests; the Helena Heights Land Co., capitalized at \$14,000, and the Fairview Park Land Co., capitalized at \$14,000.

Ample subscriptions were made to the stock of the Masonic Temple (that is in contemplation) to justify the completion of the arrangements for its erection. It will be seven stories in height, and will cost \$75,000, and will be a model of its class. There is talk of other buildings that are in contemplation, but they have not yet reached the stage of definiteness justifying mention.

The Sayre Manufacturing, Coal & Coke Co., which has for some time past been acquiring property in the Littleton neighborhood, has entered upon the preliminaries of the development of its acquisition. It is current report that in time a new furnace will be erected. But for the present its efforts will be limited to the

development of the valuable coal properties it has acquired.

The effort to have united action in reducing the output of iron has not been successful so far. That problem is working itself out, and will be solved by individual action. The estimate heretofore furnished you of the number of furnaces that will probably blow out if the present condition of affairs shows no improvement is accepted by the trade as approximately correct. A few of our furnaces have sold their anticipated output up to January, and some have sold up to December. While this condition does not apply to the larger interests, it is of sufficient importance to exert an influence on the trend of affairs. There is no disposition to keep on piling up iron when the market price shows no increment over cost of production, and holders are confident that the tide will turn not later than the opening of the new year.

J. M. K.

[Special Dispatch to Manufacturers' Record.]  
Birmingham, Ala., November 4.

Various lots, aggregating 2000 tons, of iron have been worked for export. One seller states that the price obtained equals the inside price to domestic trade. The market is the same as quoted in weekly letter.

J. M. K.

#### FOR BIG DEVELOPMENT.

Land, Mineral and Power Companies Chartered in North Carolina.

[Special Cor. Manufacturers' Record.]  
Charlotte, N. C., November 4.

Charters have been granted to four corporations with aggregate capital of \$7,750,000 and having their headquarters at Salisbury. They are the Yadkin River Electric Power Co., to develop the water-power of the Yadkin river in Montgomery, Stanly, Rowan, Davidson and perhaps other counties; the Yadkin Land Co., to deal in lands and town lots; the Yadkin Mines Consolidated Co., to develop mineral properties, and the Yadkin & Virgilina Copper & Land Co. These four big development companies are practically owned by the Whitney Company. The Yadkin Mines Consolidated Co. has a capital stock of \$1,000,000. It includes the Russell and three or four other mines contiguous in Montgomery county. The Yadkin Land Co. has a capital stock of \$1,000,000. It owns 3000 acres of land near the Narrows of the Yadkin, to be utilized as a site for a town in close proximity to the water-power. The Yadkin River Electric Power Co. has a capital stock of \$5,000,000. It will develop 46,000 horse-power at the Narrows, where the river falls 180 feet in a distance of five miles. The first development will be a circuit of 26,000 horse-power on the Stanly county side. This power will be used for factories of all sorts on the ground and for transmission to Salisbury, Concord, High Point, Charlotte, Lexington and Greensboro. The Yadkin & Virgilina Copper & Land Co., with capital stock of \$750,000, owns land in Person and Granville counties, North Carolina; in Halifax county, Virginia.

Mr. E. B. C. Hambley is president of the Whitney Company; George I. Whitney, vice-president; Francis L. Stevenson, treasurer; H. L. W. Hyde, secretary. All are Pittsburg (Pa.) capitalists. Work on the dam at the Narrows for the big power plant will begin in the spring. The rock for the dam is being quarried at Faith, Rowan county. All the outer rock will be dressed stone. There is a canal in connection with the dam which will distribute power through a section of country four miles in extent. The capital stock of the Whitney Company is \$10,000,000. The company owns 7000 acres of land, in addition to constituent companies mining gran-

ite, and water-power sites. The Whitney Company and its auxiliary development companies have undoubtedly embarked in the greatest gold-mining, milling and electrical-power developments in the South today.

In a letter to the Manufacturers' Record the Whitney Company of Salisbury, N. C., writes with reference to the proposed operations of the companies just incorporated: "These are auxiliary companies started for the purpose of developing the operations in connection with the great water-power on the Yadkin river. The Yadkin Land Co. is a company organized to improve and lay out a very large commercial town on the river, chiefly to take advantage of the cheap power that will be developed. The Yadkin River Electric Power Co. is an organization which will undertake the development of the 46,000 horse-power on the Yadkin river. The Yadkin Mines Consolidated Co. owns a very large mining property, including the celebrated Russell, which is probably the largest low-grade ore proposition this side of the Treadwell, and these properties will be developed and operated by means of the cheap power. It is expected that active operations will be commenced having in view the development of these various properties early in the spring. The Whitney Company also owns the entire stock of the Barringer Gold Mining Co., where recently a very rich strike of ore was made, possibly the richest ever discovered."

#### NEW OIL FIELD OPENED.

Developments in the Texas Petroleum Industry.

[Special Cor. Manufacturers' Record.]  
Beaumont, Texas, October 31.

A flowing oil well was brought in today on Batson's prairie, in Hardin county, eight miles west and south of Saratoga, fifteen miles west of Sour Lake and thirty-seven miles west of Beaumont. It opens up a new field. The well is 640 feet deep, with an estimated capacity of 500 barrels, but it may do as much as 2000 barrels daily. It is on property of the Paraffine Oil Co., composed of Beaumont business men. Experts in the employment of large companies have made very favorable reports on the well. The oil is about 25 gravity.

Two new pipe lines are now in operation in the oil fields of Southeastern Texas—the Security Oil Co.'s eight-inch line from Sour Lake to Beaumont and the J. M. Guffey Petroleum Co.'s six-inch line from Saratoga to Sour Lake.

With the operation of the Security line it is estimated that the movement of oil from Sour Lake has been increased fully 12,000 barrels daily, and there is now more oil being taken out than the field is producing. The other two lines from Sour Lake to Beaumont—owned and operated by the Texas Company and the Guffey Company—have been running from 20,000 to 25,000 barrels a day. Both are six-inch. The Security line is capable of handling 15,000 to 18,000 barrels a day. Figuring the total runs on a conservative basis, the present movement by pipe line is not much less than 40,000 barrels daily. Add to this amount the rail shipments via the Southern Pacific—the only railroad into Sour Lake—which are averaging 15,000 barrels or more a day, and the total movement of oil is 55,000 barrels a day out of Sour Lake.

A considerable decline in the production of the Sour Lake field has been noted in the last two weeks, due to the fact that compressed air is not so efficient in lifting the oil as it was when first employed, and Standard rigs are rapidly replacing the

air machines. Estimates of the field's production agree on 40,000 barrels as the maximum, although this probably could be greatly increased if the Texas Company should operate its wells to their capacity. Naturally, with such a discrepancy between production and movement of oil, there is a large amount being taken out of storage—10,000 to 15,000 barrels a day. Most of the earthen reservoirs which were hastily constructed to receive the output of the wells when they were flowing are proving quite porous, and the owners of the oil are anxious to get it out as soon as a fair price can be obtained, in order to save the waste. There is also the danger of fire, which is not to be lightly considered. The Security Oil Co. is buying the contents of a number of these tanks and is shooting the oil through its line to its storage tanks at Beaumont with as little delay as possible.

Prices at Sour Lake have been fluctuating the past week, and an advance of several cents per barrel has been accomplished. It is impossible to arrive at an exact figure, but twenty-eight cents has been the minimum price since last Friday, with sales at better figures up to thirty-five cents. It will not take many weeks to move the oil in storage, and when it becomes known that the buyers must depend principally or entirely upon daily production, prices will probably take an upward shoot.

The operation of the Guffey line from Saratoga to Sour Lake, a distance of ten and one-half miles, brings the product of the former field into competition to some extent with Sour Lake oil. Regular deliveries are being made from the Saratoga wells into the Guffey line, and while the present production of the field is not more than 2000 barrels a day, if as much, the completion of development work now under way will add considerably to this amount. The Texas Company has bought a tankage and pumping station site at Saratoga, and its six-inch line to Sour Lake will be finished by January 1. The same company will start a well on its Saratoga property shortly. The Guffey Company contemplates development on a large scale at Saratoga, and the other interests in the field, the Southern Pacific and W. E. Brice particularly, are pushing development work.

President E. P. Ripley of the Santa Fe and ten or twelve of his associates in the management of that company visited Saratoga last week to inspect proposed terminals for the Santa Fe spur that will be built into Saratoga between now and the first of the coming year.

It has been rumored here for a month past that the Guffey Company is seeking to buy control of the Texas Company. Telegrams from the Pittsburg office of the Guffey Company officially deny that such a deal has been made. C. F. Farnen, secretary of the Guffey Company, sent the following wire to L. M. Hoge, the official in charge of the Guffey Company's Beaumont office:

"The report that the Guffey Company has bought the Texas Company is absolutely untrue and without foundation."

The directors of the Texas Company will meet here in regular session on November 17. The Chicago directors are expected to attend the meeting. J. S. Cullinan, president and general manager of the company, has been in the East for three weeks.

An unconfirmed report is published here this morning to the effect that a flowing well has been brought in four miles northwest of Sour Lake on the Wiess property.

Ex-Governor J. S. Hogg has denied the report sent out from New Orleans that he and James W. Swayne have completed

the formation of a ten-million-dollar company to take in their holdings at Sour Lake, Spindle Top, Jennings and Anse la Butte. He admits that a proposition looking to the formation of a company has been contemplated, but states that if it is consummated the company will have a moderate capital, and that it will not be a stock-selling enterprise.

HOLLAND S. REAVIS.

#### Iron Hoops and Axles Wanted.

American manufacturers of iron products will be interested in an inquiry which the Manufacturers' Record has received from F. Braasch, Caracas, Venezuela. Mr. Braasch wants prices, terms and commission from some manufacturer (in New York if possible) on the following articles: Forty to fifty hoops made of superior iron, two inches wide by three-quarters inch thick, diameter of 155 centimeters and some of 145 centimeters; also on fifteen to twenty axletrees or axles, made of superior iron, one meter long between socket and socket, and the arm of the axletree on which the nave turns to be nine and one-half inches. These axles must be strong enough to support about 15,000 kilograms of weight.

#### Southern Pipe in Demand.

It is announced that the pipe-works department of the Lynchburg (Va.) Plow & Foundry Co. has received the contract for twenty-five carloads of water pipe for the town of Birdsell, ten miles from Buffalo, N. Y. It is expected that the contract will be completed in three weeks.

A dispatch from Birmingham states that the Bessemer plant of the United States Cast Iron Pipe & Foundry Co. will ship seventy-five carloads of water pipe to St. Louis, which has during the past ten years purchased the most of its water pipe from the Bessemer plant.

The proceeding of the seventh annual convention of the Southern Cotton-Spinners' Association, which has become the American Cotton Manufacturers' Association, have been published from headquarters at Charlotte, N. C., in attractive form. The volume includes, in addition to the record of the routine proceedings last May, the full text of the annual address of the retiring president, Mr. Geo. B. Hiss, and of the several papers presented. These included "The Development of Rapidly-Running or Yielding-Bearing Spindles," by Gen. W. F. Draper of the Draper Company, Hopedale, Mass.; "The Advantage of Diversifying Manufactures in the South," by Mr. E. W. Thomas of Charlotte, N. C.; "Mutual Fire Protection," and "Sheep Upon the Upland Cotton Fields," by Mr. Edward Atkinson of Boston; "The Electric Drive in Cotton-Spinning and General Driving in Cotton Mills," by Mr. T. B. Bolan of Baltimore, of the General Electric Co.; "The Growing of Egyptian and Long-Staple Upland Cottons in the United States," by Mr. H. J. Webber of the National Department of Agriculture, and "Southern Cotton Mills and How Their Export Trade May Be Increased," by Mr. Laurus Loomis of New York city. An interesting feature of the volume is an appendix giving the details of the raising of a fund of more than \$3500 through the American Cotton Manufacturers' Association for the benefit of employees of South Carolina mills stricken by the flood last June.

Lieutenant-Colonel James B. Quinn of the engineer corps of the army has made a request of the government for \$75,000 to complete a system of dikes on the Savannah river which is estimated will give the river a five-foot channel between Augusta and Savannah.

## BUSINESS BODIES AND MISSISSIPPI IMPROVEMENT.

In reply to requests for expressions of opinion about the comprehensive improvement of the Mississippi river under government auspices, as proposed at the great convention at New Orleans last week, the Manufacturers' Record has received the following telegrams from representative business bodies and citizens of the Mississippi valley and contiguous territory:

#### Ohio Valley Improvement Association.

Columbus, Ohio, November 4.

#### Editor Manufacturers' Record:

The work of the New Orleans convention will have a far-reaching influence favorable to the improvement of the Mississippi river and the Ohio river, together with the latter's important tributaries. The addresses at the convention demonstrated the absolute necessity of immediate and vigorous action. The convention was composed of strong men, influential in the various sections they represented, many of them men of national fame. Therefore, when a body of such men, representative in every sense, makes demand upon Congress to improve the nation's two great inland waterways, the Ohio and the Mississippi systems, the demand must be heard. The convention was one of the largest ever held in the Ohio valley or the Mississippi. Its deliberations were dignified and conservative. The action of the convention as crystallized in the report of the committee on resolutions gave voice to the irrefutable arguments presented. The absence of all save the great central point sought is worthy of note and commendation. The joining of the Ohio improvements to those of the Mississippi was the most important result of the convention. In its unimproved condition the Ohio is the greatest freight-producing inland waterway system in the world. When it is improved from Pittsburg to Cairo by the plan now really adopted by the government, that of locks and movable dams, it will carry to New Orleans and from thence to the markets of the world a tonnage surprising in its magnitude. The result will be that the Gulf of Mexico will become the great harbor of the United States and New Orleans the greatest export city in the country. While a great work was done at the New Orleans convention, much remains to be done. That it will be vigorously prosecuted, and with unceasing energy, there seems no doubt. The convention aroused the people, and when the people take hold there can be but one result—success.

JOHN L. VANCE,

President Ohio Valley Improvement Association.

#### Pittsburg Coal Exchange.

Pittsburg, Pa., November 4.

#### Editor Manufacturers' Record:

The paramount question before the country now should be the improvement of her great internal waterway system, providing the cheapest form of transportation known to man, the most important drainage system in the world, traversing a veritable empire of human activity destined to play a most important part in this country's position of commercial supremacy; so far as this nation is concerned, national in scope in every phase, whether improving the channels or remedying nature's defects in supplying banks for the streams; so far as the world's trade is concerned, international in scope in connection with the Isthmian canal, giving easy access to the markets of the world.

The national government should provide nine-foot navigation on the Ohio river and enforce the laws of Congress requiring the removal of obstructive bridges at an early date, and should improve the Mississippi along lines recommended by Mississippi Levee Convention, held in New Orleans last week. In times of peace the great highway of interstate commerce afforded by this system is the central artery of the body politic carrying the red blood of national prosperity to the uttermost bounds. In times of war and emergency it has been and will be the channel along which the pulsations of patriotic hearts throw vitalizing forces to the very outskirts of the national system, strengthening and fortifying to repel all manner of invasion.

THE PITTSBURG COAL EXCHANGE,

J. FRANK TILLEY, Secretary.

#### St. Louis Merchants' Exchange.

St. Louis, Mo., November 4.

#### Editor Manufacturers' Record:

The convention held at New Orleans October 27-29, while primarily in the interest of levee protection and extension, recognized the fact that the building of levees by the general government was incidental to the improvement of navigation. The resolutions adopted endorsed emphatically the system of river improvement on the Mississippi river and its tributaries under the supervision of the United States engineers. This expression by such a large body of representative men cannot but have the effect of impressing upon Congress the importance of continued improvement of our Western waterways. The fact that the railroad lines are even now unable to move promptly the surplus products of the great West demonstrates the necessity of using the water route wherever possible, and the yearly increase in production demands additional means of transportation, which can only be supplied by the development of both water and rail lines.

MERCHANTS' EXCHANGE OF ST. LOUIS,

GEO. H. MORGAN, Secretary.

#### Louisiana Purchase Exposition.

St. Louis, Mo., November 4.

#### Editor Manufacturers' Record:

I have always favored every proposition for national aid toward the improvement of the Mississippi river, and believe that it is very culpable, if not criminal, to fail to utilize this great waterway in the interest of commerce. The protection of the abutting lands from overflow by the construction of levees is a duty of the government too long neglected. I have been too busy to follow closely the proceedings of the New Orleans convention, but its platform could hardly be too broad to merit the hearty endorsement and the aggressive support of all citizens who appreciate the inability of individual owners to protect themselves from the inundation of navigable streams, which the government very properly reserves the right to control. I may say that I favor generous aid from an overflowing national treas-



try to all commercial enterprises that affect a large section of our country or a numerous class of our people, believing that a government is never stronger or more acceptable nor a people more patriotic or better contented than when commerce is healthy, active and far-reaching.

DAVID R. FRANCIS,  
President Louisiana Purchase Exposition.

Cincinnati Industrial Bureau.

Cincinnati, Ohio, November 4.

*Editor Manufacturers' Record:*

All watercourses are public drains, and when these drains assume the form of navigable rivers over which our government has always exercised control, then their regulations in times of flood to protect adjacent territory from destruction and damage falls, in our judgment, peculiarly within the province of our national government. Therefore we heartily endorse the action of the Mississippi Levee Convention in its effort to have the government build and maintain a perfect system of levees which will afford complete protection to such a vast extent of territory and so large a share of the population of our country, and to the enormous commercial interests of the Mississippi valley. The destructive force of a great flood sweeping down upon the broad valley of the Mississippi with its vast agricultural and manufacturing interests reaches to the farthest corners of our country, and on that account their prevention should enlist the speediest, most energetic and effective efforts of representatives in Congress from all parts of the country. We have expended and are now expending millions upon the building up of a powerful navy, but unless we foster, protect and preserve our domestic, agricultural and manufacturing interests, from which alone our national wealth and prosperity must flow, we shall have little use for the protection which our navy is designed to afford.

CINCINNATI INDUSTRIAL BUREAU,  
WM. LODGE, Executive Committee.

Cincinnati, Ohio, November 4.

*Editor Manufacturers' Record:*

As an organization devoted exclusively to increasing the number of manufacturing plants in Cincinnati, we are greatly interested in any movement that will give us a deep waterway to New Orleans, the Gulf and the ports of the world. We believe the improvement of the Ohio and Mississippi rivers to this end to be of the greatest importance and of such universal benefit to the country as to demand that it be made a national affair. The intense interest manifested in the convention of the Ohio Valley Improvement Association at Evansville, Ind., followed by the greater and broader Mississippi River Levee Convention at New Orleans, proves proper realization of the importance of those waterways by the millions of residents of the great Mississippi valley. Facts there presented prove that no government undertaking could benefit so large a citizenship or develop so wide a territory. That the nation's lawmakers may be so impressed is an end devoutly to be hoped for. When the great inland waterways comprising the Mississippi system shall have been made capable by national aid of carrying their share of the commerce possible of development in this rich section, then, and then only, will be seen a full fruition of every patriotic American's hope for the greatest era of national prosperity.

THE CINCINNATI INDUSTRIAL BUREAU,  
WILL L. FINCH, Secretary.

Kansas City Board of Trade.

Kansas City, Mo., November 4.

*Editor Manufacturers' Record:*

Replying to your telegram of even date asking for my opinion upon the value of the work done by the Mississippi River Levee Convention at New Orleans, I beg to say that the convention, being composed of men thoroughly familiar with the subject or experts and members of Congress and delegates representing important and leading business organizations, who, after thoroughly discussing and considering the matter, adopted resolutions favoring government appropriations for the building of levees, can but have influence with the people and Congress. Congress rarely takes the initiative. The people can express themselves more forcibly through conventions than otherwise. I believe good will result.

E. D. BIGELOW,  
Secretary Board of Trade.

Chicago Drainage and Ship Canal.

Chicago, Ill., November 4.

*Editor Manufacturers' Record:*

The resolutions adopted at the New Orleans convention were the expression of the delegates from all parts of the Mississippi basin; in fact, of the entire country. The delegates present voiced the sentiments of the people in the entire Mississippi basin—

1. In point of representation.
2. In point of earnestness of purpose.
3. In point of intelligence.

FRANK WENTER,  
Chicago Drainage and Ship Canal.

Cincinnati Board of Trade.

Cincinnati, Ohio, November 4.

*Editor Manufacturers' Record:*

The Cincinnati Board of Trade is in close touch with efforts to improve navigation in the Ohio and Mississippi valleys. It regards the movement as of an important national character, co-ordinate and co-important with the construction of an Isthmian canal. These projects are inseparable in the stimulus offered to commercial interests of the nation by reason of facilities required for growth and expansion of commerce in the greatest valley of the world, the center of the Union in wealth, population, production, industrial and commercial development. The civilized world is looking to waterways as essential adjuncts to railway systems in the movement of fuel and raw material required to keep up the pace of industrial progress now being set by America. The opening of rivers in this valley to constant navigation by adequate slack water and levee construction is a government function which cannot be relegated to private enterprise. The expenditure, inconsider-

able compared with cost of railways, should not be opposed upon local or economic grounds. The undertaking should not be classed with ordinary river and harbor improvement or subjected to limitation by ordinary standards of such expenditure. It merits national support, on account of national necessity.

CINCINNATI BOARD OF TRADE,  
E. P. WILSON, Secretary.

A Pioneer Worker for Levees.

St. Louis, Mo., November 4.

*Editor Manufacturers' Record:*

I acknowledge receipt of your telegram. There were about 900 delegates at the New Orleans Levee Convention last week, representing about twenty States and Territories in the Mississippi valley, and interested in the improvement of the Mississippi river and its tributaries. Their expressions were very unanimous in favor of the permanent construction of such levees as will keep these waters within proper limits and insure permanent and reliable navigation, and unanimously adopted resolutions asking the Congress of the United States to make such appropriations as would result in the completion of this great national work.

E. O. STANARD.

The Trans-Mississippi View.

John H. Kirby of Houston, Texas, president of the Kirby Lumber Co., and late president of the Trans-Mississippi Congress, writes: "I believe earnestly that destiny has decreed that the American people shall lead the civilization of the world, and that in commerce, manufactures and the arts we should be first among the powers of the earth. To that end the great Mississippi river was stretched by the hand of God for the convenient service of a chosen people. We would be recreant to duty and false to ourselves if we failed to preserve its navigable efficiency. I am one of those who believe it to be the duty of the general government to protect the fertile valleys skirting this great waterway. The argument in connection with this work that public appropriations cannot be made to advance the interests of private property-holders is the resort of sophists and the creed of the narrow. Let America's aspiration to progress, her patriotic devotion to national ascendancy, her pride of home and her just desire for the happiness and prosperity of her splendid people urge the Congress to make liberal, sufficient and prompt provision for this indispensable work."

## JOHN SKELTON WILLIAMS AND THE SEABOARD.

He and His Friends Are in Complete Control of That Railroad System.

By THOMAS P. GRANTY.

[Written for the Manufacturers' Record.]

The very unusual private and public expressions and deliverances that came up from the South when it was announced that the houses of Williams & Sons and Middendorf & Co. were in trouble had the effect of focusing public attention on one asset that John Skelton Williams and J. W. Middendorf and their firms held beyond possibility of loss through stock fluctuations, financial panic or industrial depression, to wit, the confidence of the people. The embarrassment of the houses that financed the Seaboard brought out the fact that Skelton Williams had managed to "grapple unto his soul with hooks of steel" an army of warm, loyal, devoted friends.

So widespread a feeling of almost affectionate concern for the future status of this splendid Virginian in respect to the railroad system of which he was the organizer, and as to the future of the Seaboard itself, kept the people of the South on the lookout for news as to the outcome of the troubles that had overtaken the two firms with which he was identified. People everywhere in the States traversed by that system have been anxious to be assured that he would continue to "hold the fort." And so when, among other stories that originated in New York, one more elaborate than the rest appeared purporting to define his new status as that of a railroad president through the grace and under the authority of a "boss," the people of the South from Baltimore to Birmingham took it to heart. That sort of a status was not to their liking. They have been hoping that there might be some mistake about it. And it seems that their hopes are not to be disappointed. In an interview with Mr. Williams today he said:

"The Seaboard Air Line system is in no way affected by the temporary difficulties of the Baltimore and Richmond banking firms. The system is in a sound and healthy financial condition. Its earnings

for the twelve months ending September 1, 1903, amounted to \$12,846,691 on 2611 miles of railroad operated. The various railroad properties which are now consolidated into the Seaboard Air Line system were acquired by my friends and myself in the winter of 1898-99. The mileage of these properties at that time was 2553 miles, and their gross earnings for the previous fiscal year were \$7,946,613."

It is therefore seen that during President Williams' administration the gross earnings of these properties have increased approximately \$5,000,000, or about 61 per cent., and the net earnings have increased during the same period about 50 per cent., whilst the mileage increased 10 per cent.

As every traveler over the line knows, the physical condition of the property has been vastly improved, and is in excellent condition. It may be safely stated that the physical condition of the Seaboard Air Line system is considerably above the average of Southern railroads. The improvement in the company's physical condition in the past two years has been especially marked, and this has been done without issuing a single dollar of new stock and without adding a dollar to the company's bonded indebtedness, exclusive of car trusts. This is a record which few railroads can excel.

Referring to the financial condition of the road Mr. Williams says:

"Efforts have been made to exaggerate the company's floating indebtedness. As a matter of fact, the so-called floating debt of the Seaboard Air Line system is entirely insignificant and scarcely amounts to as much as one month's gross earnings of the system. Besides this, the company has in its treasury, entirely unencumbered, several million dollars of first-class securities, exclusive of \$5,600,000 of its own preferred stock and \$8,500,000 of its common stock.

"The company's net surplus for the past

fiscal year amounts to more than full 4 per cent. on its preferred stock, with a small percentage for the common stock. In this connection it is interesting to note that the amount which the Seaboard Air Line carried to profit and loss for this year is more than the amount carried to the credit of profit and loss by either the Southern Railway or the St. Louis & San Francisco Railroad, which are larger systems, operating in somewhat the same territory."

The gross earnings per mile of the Seaboard Air Line system a year ago were slightly ahead of the gross earnings per mile of the Atlantic Coast Line system. I have not seen the annual report of the Atlantic Coast Line Railroad for the year just closed, and do not know what the earnings per mile of that system were for that period. There is very little difference between the total capitalization, including bonds and stocks, of the Atlantic Coast Line system and the Seaboard Air Line system, yet Atlantic Coast Line stock is quoted in the market about 112, and is highly regarded at that price, while Seaboard Air Line stock is quoted about 12.

In closing, Mr. Williams said: "There is some reason to believe that systematic efforts have recently been made to depress the value of Seaboard securities and injure the credit of the company, but I have no hesitation in saying to the security-holders of this company that, in my judgment, their securities are today intrinsically more valuable than they have ever been at any time in the past, and that I believe that the company will not only continue to earn a surplus equal to more than 4 per cent. on the preferred stock, but that its surplus earnings will largely increase from year to year."

When he had finished I said: "But you haven't answered my question as to your own status as president." His answer was: "There has been absolutely no change in my relationship to the system. My official position is just what it has always been, with no curtailment of its powers or prerogatives. I and my own close friends still own more than a majority of the company's stock. No change of policy is under consideration further than to work harder than ever to develop our resources and make the most of our opportunities."

That John Skelton Williams has passed through some trying ordeals since the embarrassments of his own firm and Midendorf's is undeniable. But he has never for one moment (as I am told by those who know) lost his courage, his good nature or his head. The man who can keep calm, serene and cheerful withal under such stress and perplexity is a man to be reckoned with by the captains of affairs. Self-reliance that stays with a man while the crash is on is a quality that his enemies should take into account in planning his undoing.

New York, November 3.

## PHOSPHATE-ROCK DEPOSITS.

### Importance of Handling Them Economically.

Messrs. C. Willard Hayes and Edward O. Ulrich of the United States Geological Survey, in a report describing the mineral resources of the Columbia quadrangle in Tennessee, have taken pains to emphasize the limited extent of its most important product, the rock phosphates that are helping to make Tennessee's geologic fame. The report has, therefore, great economic interest in that it may be expected to call to the attention of those engaged in the development of this important resource of the State the almost criminal wastefulness of the mining methods now in vogue.

Surely no subject can be of more vital interest to mankind than the exhaustion of the soil and the possibilities of its re-enrichment. It might, therefore, behoove the American people of today to imitate the wise policy of the ancient Peruvians, who, appreciating the agricultural value of the guano formed on their shores from the excrements of sea birds, enacted laws that forbade the slaughter of the birds. The census bulletin of 1900 shows, however, that, owing to the final exhaustion of supplies, the importation of guano into the United States has now almost ceased. The majority of the 478 fertilizer factories in the country depend on the chemical treatment of phosphate rock for their product. How important, then, that the limited nature of the supply be fully realized. The fact that the need for fertilizers grows with the advance of civilization makes all the more imperative a wise conservation of this valuable deposit. It is only ten years since high-grade phosphate rock was discovered in Tennessee. The first commercial shipment of this rock was made in 1894, and in the eight years up to the end of 1902 about 2,200,000 tons had been marketed, which had a value at the mines of nearly \$6,000,000. Phosphate rock has thus become, next to coal, the most important mineral product of Tennessee.

In the United States deposits of rock sufficiently high in phosphate to be commercially valuable for the manufacture of fertilizers are confined to a narrow belt along the Atlantic coast in the Carolinas, Georgia and Florida and a small district in Western Middle Tennessee. The latter district, embracing portions of Maury, Hickman and Lewis counties, is practically all covered by the Columbia folio. Five phosphate-bearing formations are found in this field, and as two of the formations contain each three or four separate beds, no fewer than ten phosphate horizons are distinguishable within the Columbia quadrangle. Of the five phosphate-bearing formations, four are Ordovician in age and carry brown residual phosphates, while the fifth is of Devonian age and contains several varieties of black or blue bedded phosphate. The Devonian phosphates differ from the Ordovician phosphates, which are the result of the leaching of a phosphatic limestone, in being simply beds unchanged from their original form and composition except by such alteration as results from the process of consolidation to which all deeply-buried sediments have been subjected. They are, therefore, harder and have a much denser structure than most of the Ordovician phosphates, and are richer in phosphoric acid than the unleached Ordovician phosphatic limestones. They are mined, not like the leached phosphates, by stripping, but like coal, by the much more expensive method of driving tunnels. The maps in the folio show the exact location and extent of the deposits which have commercial value, and also the extent of the various phosphatic formations in outcrop and beneath the surface. Why these formations contain valuable deposits in some places and not in others is a question that can be answered only by a consideration of the entire geologic history of the region, such as the authors have here attempted. The report affords an excellent example of the way in which the science of paleontology, generally regarded as having no practical application whatever, is absolutely essential for the solution of some economic problems.

An American steamer, the Massachusetts, sailed from Galveston for Havre last week with a cargo valued at \$1,285,328.

## TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

### To Rebuild Clifton No. 3.

The Clifton Manufacturing Co., Clifton, S. C., has completed arrangements to rebuild and equip with new machinery its No. 3 mill, destroyed by the Pacolet valley flood last June. Contract for erecting the new building has been awarded to Messrs. T. C. Thompson & Bros. of Birmingham, Ala., at about \$110,000, and calls for completion about April 1, 1904. The textile machinery will consist of about 35,000 spindles and 1050 looms, both electricity and steam to be used as motive power. This equipment will cost about \$500,000. The product of the new mill will be a finer class of goods than was manufactured in the plant destroyed. The company is now remodeling mills Nos. 1 and 2, partially destroyed by the Pacolet flood, at a cost of about \$75,000, Thompson & Bros. being the contractors for this also.

### Winston's New Knitting Mill.

Messrs. P. K. Green and W. A. Blair will operate the knitting mill reported last week as to be established at Winston-Salem, N. C., by P. K. Green. As was stated, contract for the machinery has been awarded, and the mill will have a daily capacity of about 300 dozen pairs of hose. If the supply of labor proves satisfactory it is the intention of the owners to organize a stock company and increase the plant for manufacturing high-grade hosiery, full-fashioned as well as seamless, for men, women and children.

### The Cotton Movement.

In his report for October 30 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during the sixty days of the present season was 2,607,688 bales, a decrease under the same period last year of 538,019 bales; exports, 1,270,143 bales, a decrease of 240,804 bales; takings by Northern spinners, 272,892 bales, a decrease of 86,850; by Southern spinners, 352,945 bales, a decrease of 40,248 bales.

### Textile Notes.

W. G. Tice of Weatherford, Texas, contemplates locating at Cleburne, Texas, a hosiery knitting mill to cost \$14,000 and employ fifty operatives.

Messrs. W. B. Cooke of Louisburg, N. C., and John Walton, Jr., of Philadelphia, Pa., contemplate establishing the \$10,000 knitting mill at Wilson, N. C., referred to last week as proposed.

Dixie Mills, Lenoir City, Tenn., has decided to manufacture yarns to supply the machines in its knitting plant. Contract has been awarded for the installation of 2000 spindles and a 150-horse-power engine.

Anderson (S. C.) Phosphate & Oil Co. is now installing the equipment for its cotton-rope mill, reported recently. It has been decided to manufacture yarns also, and the plant will be known as the Conneross Yarn Mill, consuming about ten bales of cotton daily and be operated by electricity. About \$40,000 is being invested.

The Ouachita Cotton Mills of Monroe, La., has called a meeting of its stockholders for November 5 to act upon the decision of the directors for increasing the equipment of machinery. The company at present has 2496 spindles and seventy-five looms.

A Northern hosiery-mill company contemplates establishing a branch plant in the South, and a proposition has been made to locate the enterprise at Tallapoosa, Ga. A \$50,000 company is proposed to be organized, with a local man as manager.

Messrs. H. L. Clayton, B. H. Callahan, W. H. Chapman and W. T. Smith have incorporated the Calumet Manufacturing Co. to build the cotton-yarn mill lately reported as proposed at Liberty, S. C. The capital stock is \$50,000. Further details have not been announced as yet.

The Louise Mills of Charlotte, N. C., has completed the installation of 5000 additional spindles. This company has expended probably \$75,000 for this new machinery, and no reports regarding the improvement have been current. Its previous equipment was 20,000 spindles and 562 looms.

Bonnie Cotton Mills, Kings Mountain, N. C., mentioned last week as to enlarge its plant, has ordered additional machinery. Contract for 3000 additional spindles and twisters has been awarded, and this new equipment will fill the company's building. Probably about \$20,000 will be expended.

Messrs. J. B. Floyd and Burke Floyd of Savannah, Ga., are the purchasers of the Eatonton Cotton Mills and water-power-electrical plant at Eatonton, Ga., referred to last week. The mill has an equipment of 3500 spindles and 100 looms for manufacturing homespun, and will be put in operation at once. It is stated that the price paid was \$42,000, and that the appraised value of the property is about \$75,000.

Mention was made last week of reports stating that the Royal Bag & Yarn Manufacturing Co., Charleston, S. C., will double its 5000 spindles and 200 bag looms. The company is installing considerable additional machinery now, and has called a meeting for December 3 to act on increasing capital. On that date the stockholders will meet to decide upon the proposition of the directors that capital stock be increased from \$325,000 to \$475,000 in order to provide the funds for the additional machinery being installed and for other improvements.

The Ninety-Six Cotton Mills' stockholders held their first annual meeting last week. They re-elected E. M. Lipscomb as president and treasurer; John B. Sloan, secretary, and directors Messrs. Lipscomb and Sloan, Eliason A. Smyth of Pelzer, S. C.; J. K. Durst and A. F. McKissig of Greenwood, S. C.; F. G. Brown of Anderson, S. C.; J. P. Phillips of Ninety-Six, R. P. Snellings of Boston, Mass., and Summerfield Baldwin of Baltimore, Md. The company's mill at Ninety-Six, S. C., has been completed recently with an equipment of 11,400 spindles and 300 looms. Its full capacity is 20,000 spindles and complement; capital stock \$200,000.

In his annual report Rear-Admiral Endicott, chief of the bureau of yards and docks of the Navy Department, reports that several navy-yards, especially those at Norfolk and New York, are becoming congested, and that their efficiency will become restricted unless relief is given. His estimates include expenditures of \$817,000 for Charleston, \$655,000 for Norfolk and \$439,233 for Washington.



## MECHANICAL.

## Sturtevant Foundry and Pattern Departments.

For several years before the fire of 1901, which badly damaged the B. F. Sturtevant Co.'s plant at Jamaica Plain, Mass., the company had felt the necessity for more extended manufacturing facilities. That fire resulted in removal to Hyde Park, nine miles from Boston, where one of the most extensive and modern manufacturing plants in New England has been built. The plant comprises various buildings, with more than nine acres of floor area. Every department is thoroughly up to date, and the foundry and pattern departments illustrated herewith are of special interest.

The pattern building is divided midway of its length by fire walls enclosing stairs, elevators, etc. One-half the building, stories, respectively, 17 and 15 feet, is devoted to the flask and pattern making rooms, while the other half, provided with intermediate floors, making four in all, is utilized for pattern storage.

The flask shop, 60x80 feet, is equipped with band, cross-cut and splitting saws, boring machine and lathe, all driven by a 10-horse-power Sturtevant motor suspended from ceiling. The industrial railway runs directly into this room from the foundry (about 40 feet distant), and, together with an overhead transfer truck, reduces to a minimum the cost of handling flasks. Lumber for their manufacture is unloaded from cars directly in front of building. This room also includes metal pattern-makers' department, fully equipped. Adjacent thereto is the locker, wash and toilet room for the building.

Immediately above is the pattern shop, abundantly lighted upon three sides and equipped with a full complement of tools, including one single and two double saw benches, two band saws, a buzz planer and a double surfacer, five lathes, one of which is a 66-inch by 11½-foot gap lathe, a drill press, a core-box machine, numerous wood trimmers, etc. All the power machines are operated by two 10-horse-power Sturtevant motors, both being required for ordinary work, but one always serving as a possible relay in case of accident.

The benches, which accommodate two men each and measure 2 feet 6 inches by 16 feet, are so arranged along the sides of the building that the men all receive a left-shoulder light. Behind each bench is a working table 4 feet wide by 16 feet long. The benches are supported by cast-iron legs of special design which were built by the Sturtevant Company; the same design is used throughout the plant. They are equipped with Emmert vises, and their tops are of heavy maple plank. A drying chamber for glued work is provided which receives warm air through the general heat flue from a Sturtevant heating apparatus below.

Around the pipe columns which support the floors of pattern-storage end of building are clamped pattern shelving brackets adjustable to any height. All patterns are consecutively numbered upon the drawings as made. When the patterns are delivered to storage department proper locations are assigned and records thereof made upon cards, one for each pattern, filed in the order of the pattern numbers. Four figures with the addition of a letter are in every case sufficient to locate a pattern.

The first floor is of concrete, designed for keeping heavy cast-iron patterns. It is served by an industrial railway and turntable, which permits of transfer to elevator and thence to other floors. Communication between pattern shop and

storage department is direct, while fire risk is reduced to a minimum by double system of fire doors.

The molder's written order to make a specified number of castings is issued at foundry office directly to pattern keeper, who makes a record thereon of pattern location, attaches it to pattern and sends both to foundry. A metal clip placed upon storage record card indicates the pattern is out.

The foundry consists essentially of two long craneways, each 35 feet wide, a center bent of the same width and side floors 30 feet wide. The brass foundry, core-room and washroom are located at one end, charging floor at one side nearly midway of length, and cleaning-room at other end. The craneways are designed for 20-ton electric traveling cranes. Those already installed are of the Whiting Foundry Equipment Co.'s make, equipped with Sturtevant motors.

Brick division walls 3½ feet high, running lengthwise of the foundry, separate the floors on the lines of the columns. Lighting is secured through monitors in both of craneways and through ample side windows. Each line of monitor transoms is operated in unison by a novel device installed by G. Drouve Co. The western side of foundry is given up to bench and small floor molding, the bench molder's floors being separated at bench ends by wooden partitions. The floors throughout this side of building, as well as those in storage bins and center runways, are of concrete. Alongside the



NEW FOUNDRY AND PATTERN DEPARTMENT OF B. F. STURTEVANT CO.

industrial railway, which serves iron from ladle trucks to bench floors, is a sunken trench laid with common brick as a suitable place for drippings and for piling hot castings.

In the center line of each craneway and in the bent between them runs an industrial railway with turntables connecting with the cross aisles which provides for the distribution of metal, etc., to all parts of building. The floor between craneways is supplied with a series of 1½-ton small traveling cranes of about 10 feet span equipped with Sturtevant electric hoists built especially for this work.

All materials are received from truck along one side of foundry and delivered through wall openings to bins which fill a portion of side wing adjacent to cupolas. For the present the sand storage bins and mixing-room are also within this building.

An ingenious system of charging has been devised under which the charging cars pass at floor level in front of the bins, are there loaded with the requisite amounts, weighed and passed to elevator, where they are raised to charging floor. As each car is unloaded it is pushed forward and started down an incline, whence it passes back in a direction opposite to that traversed while being loaded on the floor beneath. A novel apparatus gradually brings it to a standstill while yet upon the incline, and then releases it so that it may, by its own weight, roll on to an elevator which is automatically tripped and descends to the ground floor level. Here it is removed by a loading man and the elevator returned to its place above to receive another load.

The cupolas are two in number of Whiting make, 56 and 72 inches in diameter. The opportunity has been improved to show the eminent adaptability of the Sturtevant pressure blower. A No. 8 and a No. 10 blower, driven, respectively, by a 30 and a 40-horse-power Sturtevant belted motor, are supported upon charging platform, through which they discharge directly downward, and thence to cupolas. It is intended to make this installation the subject of critical experiment for the establishment of important principles.

The entire transportation equipment, including tracks, turntables, cars, trucks, etc., was designed and built by the Sturtevant Company. The trucks in the foundry are imbedded in the concrete runways, and all changes of direction are secured by turntables, there being no switches in the works, and therefore no radial truck cars, all cars having rigid bases. The turntables are very heavy in design, to avoid distortion or breakage, and consist of a bottom frame with four roller wheels carried upon composition trunnions, and a cover, which is recessed for crossing tracks at right angles, and provided on underside with a chilled tread with which the wheels come in contact. A small idler wheel is provided which automatically stops the turntable on each quarter, but readily releases it. The cover is accurately centered by a chilled conical bearing.

The cars are provided with a special type of ball bearing which is practically

which passes through this room. A portion of the room is partitioned, and serves for women coremakers employed in this department. The floor is of concrete. The tops of the ovens are utilized for storage of cores upon a special rack of steel construction. A Blake wire-straightener, driven by a five-horse-power Sturtevant motor, together with a Hanna pneumatic shaker, are the principal machines in this room.

At the other end of foundry is the cleaning-room, through which run longitudinal tracks from each main aisle of the foundry. A five-ton three-motor electric crane of Whiting Foundry Equipment Co.'s manufacture, equipped with Sturtevant motors, serves the principal portion of floor in this room. The six tumbling barrels are completely enclosed in housings of steel plate. These, together with a Sly cinder mill and several emery wheels, are driven by a 30-horse-power Sturtevant motor. A temporary air compressor located in one corner and driven by a Sturtevant motor supplies air at 100 pounds pressure to chippers, shakers, hoists, etc., employed in connection with this work.

Adjacent to cleaning-room is pickle-room; floors both of concrete. The pickle beds are of teeter-board construction, so designed that acid may be drained back into the vats and the board subsequently teetered over for washing into trench on other side of room. The floor slopes to give drainage. A pneumatic traveling crane serves this room.

One of the noticeable features in the equipment is the sanitary arrangements. The foundry has a large locker and wash-room—expanded metal lockers—225 are in position. Six enameled iron sinks are served with tempered water. A series of slate partitioned shower baths proved very acceptable during the summer. The floor of this room is of tar concrete; upper walls and ceilings are white and fresh, in pleasing contrast to the steel work and base of the walls, which are finished in dark green. Within the same room is installed the time-recording system, so placed that a double line of men pass the board, one upon either side, as they go and come from the room. The foundry foreman and assistants are provided with an attractive office.

Naturally, the entire plant is heated and ventilated by the Sturtevant system. In the case of the pattern building the apparatus, consisting of an engine-driven fan and steel-pipe heater, is placed close to the division wall, delivers the heated air into a vertical flue, and thence to the various rooms. The air for this apparatus is taken directly from out of doors, and there is a peculiar freedom from dust in the pattern storage rooms, which could not be avoided were any of the air drawn back from pattern shop. The foundry apparatus is located overhead in the end of one of the craneways, and arranged to take fresh air from out of doors or return the air from the building and reheat it. This apparatus consists of a three-quarter housed steel-plate fan discharging in two directions into galvanized-iron pipes. The fan is driven by a direct-connected horizontal engine. The heating apparatus for each building is designed to operate with exhaust steam. The entire system is under thermostatic control to maintain an even temperature.

Distribution of air is made through a system of overhead galvanized-iron piping, discharging downward to the floor, thereby distributing the air in even volume and economizing in the amount of heat required. The foundry apparatus is employed to force cool air into the building in summer.

A complete underground tunnel system is provided for distribution of steam and

return of water of condensation, distribution of electricity, compressed air, oil, etc., from power-house to various buildings. The tunnel measures 5x6½ feet. In the pattern building and foundry the pipes are laid in concrete trenches covered by iron plates, which present equal facility for reaching the pipes and wires.

#### A Quarter-Turn Rope Drive.

That there is no problem too difficult to be solved by means of rope driving has long been claimed by engineers and mechanics who favor this convenient and economical form of driving shafts. As an illustration of the remarkable adaptability

quired revolutions could be but thirty-four inches. This left a space of but ten feet in the clear between the circumference of the driver and the circumference of the driven, and in this short space it was necessary to make a quarter-turn.

After considering every possible means, it was decided that rope transmission was the only practical solution of the problem, and grave doubts were held as to the ability of even this agent, for it was argued that so sharp a turn for the number of ropes required in so short a distance could not be made; that the ropes would not follow the grooves of the sheaves in the first place, and even if

near the wall, thence to the tension carriage, where it is crossed over to the opposite outside groove of the driven sheave.

In installing this machinery the driver and driven sheaves were first placed according to the usual rule for setting quarter-twist ropes; that is, the driven sheave was placed so that a horizontal line drawn from the center groove of the driver was tangent to the lower circumference of the driven. When the drive was threaded up, however, it was found that the catenary of the ropes was so great that they did not lead properly into the grooves of the driver. The driven sheave was then raised until its lower circumference was tangent to a horizontal line drawn through the upper groove of the driver.

This overcame all trouble so far as the pulling side of the ropes was concerned. The next problem was to so arrange the deflecting idler that the ropes as they came from the drive should lead perfectly straight into the grooves of the idler. It was found that they might lead from these grooves at a very acute angle without danger of the rope running off the drive.

To transmit the 200 horse-power ten laps of one-and-one-eighth-inch rope are used, the speed of the rope being about 5150 feet per minute. At the time the drive was installed it was estimated that the rope would last only from eight to ten months, but notwithstanding the short

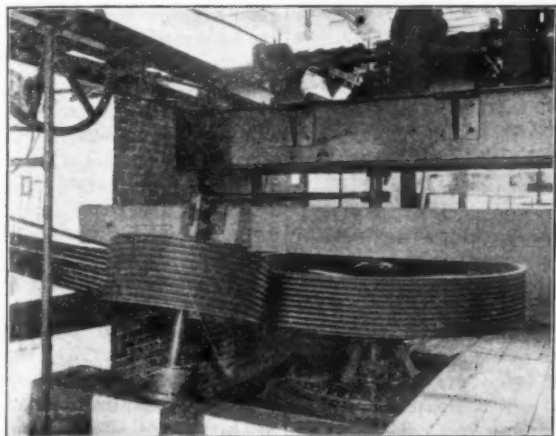


FIG. 1.

of rope transmission and its success under difficult installations may be described how a knotty question was solved in the plant of Messrs. James & E. H. Wilson at Pittsfield, Mass.

They operate a large woolen mill, and up to about a year ago used steam power. An opportunity was presented to purchase a water-power situated over three-quarters of a mile from the mill. About 200 horse-power could be obtained from a vertical turbine wheel which was in an abandoned mill that had formerly been operated by this wheel, the old-fashioned system of gearing being used to transmit the power.

they could be made to follow the grooves, they would quickly wear out, for they would lead from some of the grooves at an angle so acute as to cause frictional wear at the flanges.

The large saving in money that would be gained should the rope drive be successful was sufficient argument for the experiment. After consulting F. S. Greene, the transmission rope engineer of the American Manufacturing Co., there was installed from his designs the rope drive shown by the accompanying illustrations, which has proven a complete success and most economical.

In Fig. 1 the water-wheel and the de-

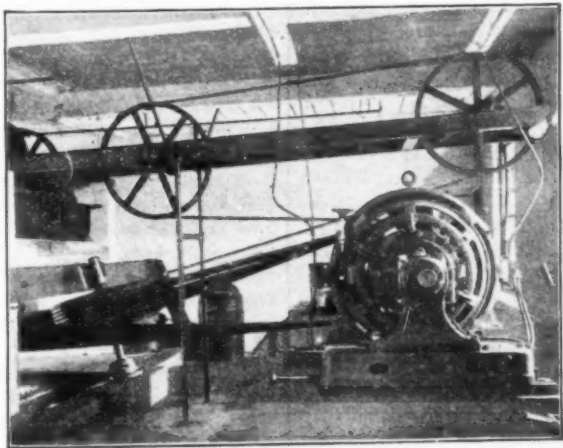


FIG. 2.

Under ordinary circumstances it would be an easy problem to drive from this water-wheel to a generator carrying the electric power by wires to the mill, but the building which contained the water-wheel was limited in space, the longest possible distance between the water-wheel and generator that could be procured being but sixteen feet. Further than this, it was necessary to procure from 580 to 590 R. P. M. at the generator, while the water-wheel itself ran at a speed of but 200 R. P. M. This required that the driving sheave upon the turbine should be ninety-six inches in diameter, whereas the largest driven sheave to procure the re-

flecting idler are shown. The vertical shaft from the water-wheel is supported at its upper bearing by heavy steel I beams. This clumsy and expensive arrangement has nothing whatever to do with the rope drive, but was necessary for the old gear drive, which still remains in place, though not in use.

In Fig. 2 a small portion of the driving sheave is shown on the extreme left, while the generator, deflecting idler and tension carriage are all clearly seen. The lower ropes are on the pulling side. The tension is taken, of course, from the slack side, the rope being led from the upper groove of the deflecting idler to the guide sheave

#### Notes from Northern Machine Shops.

By CHAS. S. GINGRICH, M. E.

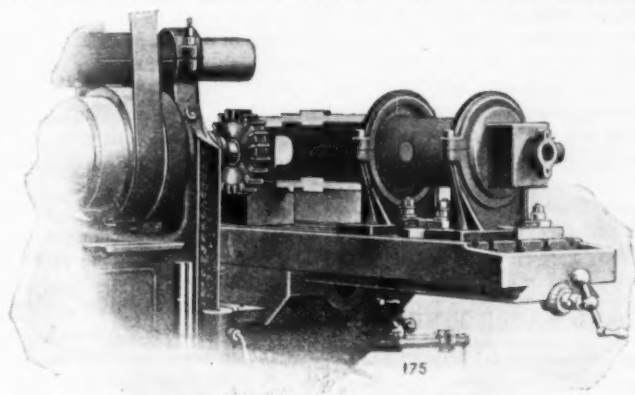
##### VI.

##### AUTOMOBILE MANUFACTURE.

There is probably no branch of the mechanical industries that is as busy at the present time as the automobile manufacturers.

Although this business is comparatively new, and the process of duplication of parts has not yet been carried out as thoroughly by any means as in the bicycle business, it is, nevertheless, surprising to note the system that prevails in the manufacture of these machines even in factories where no permanent model has yet been decided upon.

Standard automatic machines are largely employed on small parts, and wherever metal is to be surfaced off of castings, large or small, this is done by machines and methods adapted for doing it in the quickest possible manner. A notable example of this is presented in the accompanying illustration, which shows the engine frame of a well-known automobile manufactured in Ohio, mounted on the table of a Cincinnati Geared-Feed Miller, in process of being finished. The surface is about ten inches wide, and is being finished at one cut with a 10½-inch diameter face mill which is feeding three-tenths of an inch for every turn of the cutter, with a resulting table travel of five



CINCINNATI GEARED-FEED MILLER.

centers, the high speed and the many reverse turns, one piece of "American" transmission rope has given excellent service during the twelve months this drive has been in operation, and is still in very fair condition. When it is remembered the distance between the shaft of the deflecting idler and the shaft of the generator is but ten feet; that in this short space ten ropes make a sharp twist, and that the angle at which they leave the deflecting sheave and enter the grooves of the driven sheave is considered, it speaks volumes for the hard work that a good transmission rope can do under adverse circumstances, and there are more unfavorable conditions yet to be told, for the usual rule that the smallest sheave diameter of the rope had to be violated in the case of the driven sheave, for instead of forty-five inches in diameter, this, as before mentioned, is but thirty-four inches.

This is believed to be the shortest quarter-turn drive in use where any considerable amount of power is transmitted, and certainly there is no other drive where ten ropes are asked to do the bending and twisting that is done here.

The American Manufacturing Co. mentioned has its headquarters at 65 Wall street, New York.

The Monkseaton of 1776 tons is the first steamer to carry a full cargo of naval stores from Pensacola.

and one-quarter inches per minute. The actual time required for taking the cut is a little over four minutes, and the operator requires about ten minutes for chucking and handling the pieces, at which rate one engine frame is easily finished every fifteen minutes.

Several years ago it would not have been considered practicable to do work in this manner, and a shaper or small planer would have been used instead, and, of course, the time for finishing the job would have been at least double that required by the method mentioned above.

The milling machine noted is built by the Cincinnati Milling Machine Co., Cincinnati, Ohio.

#### Magnolia's Water-Works.

[Special Cor. Manufacturers' Record.]  
Magnolia, Miss., November 2.

The town of Magnolia has voted unanimously in favor of issuing \$25,000 of bonds for the construction of a system of water-works. The town council will push this new enterprise as rapidly as the nature of the work will permit.

The new cotton factory is fast nearing completion. It will be one of the most handsome and most complete mills in the State. Its primary equipment will be 5000 spindles and 150 looms, but the mill is so built that its capacity may be easily increased.

The Mississippi Textile Novelty Co., to manufacture the finer grades of cotton goods, will begin work in a short while.



## RAILROADS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

### "ORIENT'S" PROGRESS.

#### Construction Started on the Kansas City Outer Belt Line.

The Kansas City, Mexico & Orient Railway Co. continues to push work on its line that is to go from Kansas City, Mo., 1600 miles southwest to Port Stillwell on Topolobampo bay on the west coast of Mexico. The construction of the Outer Belt Line that is to be built by the Orient interests at Kansas City has begun, and Chief Engineer Milnor P. Paret writes the Manufacturers' Record as follows:

"We have just placed a contract with O'Hearne Bros., contractors, of this city for the grading, clearing, grubbing, etc., on a couple of miles of the Outer Belt road. We do not expect to crowd this work this winter. We are simply getting the line in shape so that in the spring, if desired, we can open up with a strong force and push the work rapidly. There is a large summit cut to be taken out, and the material from this cut will have to be hauled each way for a mile or more, and this particular work will probably be done next spring by train service."

A report from Chihuahua, Mexico, quotes W. T. Millington, assistant local manager of the Kansas City, Mexico & Orient Railway on the west coast, as saying: "We have rails laid up to the seventy-third kilometer from Topolobampo and are pushing the work on to El Fuerte on the ninety-eighth kilometer. We have rails to lay 130 kilometers of track from Topolobampo, and have the grading done for 118 kilometers or ten kilometers east of El Fuerte. We have about 600 men at work."

### STANDARD GAUGE FINISHED.

#### National of Mexico Gets a Good Grade All the Way.

The National Railroad of Mexico has, according to advices from the City of Mexico, completed the standard-gauging of its line from Laredo, Texas, to the Mexican capital, a distance of 840 miles.

The work of changing the line from narrow gauge to a standard gauge was started in December, 1901. New steel rails were laid, bridges and culverts were enlarged and several large bridges were constructed. The Mercedes tunnel, 1124 feet long, and the San Miguel tunnel, 1304 feet long, were completed. A very large fill, comprising 400,000 cubic yards of earth, was made across the Chone canon.

It is stated that the maximum grade northward from the City of Mexico for the first twelve or thirteen miles is 1½ per cent., and from that point on to Laredo less than 1 per cent.; southward from Laredo to the City of Mexico the maximum is 1 per cent. The company proposes to establish a daily limited express service each way with fine new equipment throughout.

### Memphis & Gulf.

Mr. Seely Dunn, general manager of the proposed Memphis & Gulf Railroad, is quoted from Memphis as saying that three parties of engineers, or a total of forty-five or fifty men, will enter the field between Grenada, Miss., and Pensacola, Fla., within a fortnight to locate the permanent line of the road. Capt. H. P. Farrar will, it is reported, have charge of the engineers in the field. He has been surveying for the Frisco's proposed line between Memphis and New Orleans, but

he also made the preliminary surveys for the Memphis & Gulf. The line from Grenada to Pensacola, Fla., will be 312 miles long, and will run through the counties of Grenada, Webster, Choctaw, Washington, Neshoba, Kemper, Lauderdale and Clark in Mississippi. From the county of Choctaw, Ala., it will run to Escambia county, Florida.

Along the entire route is a fine supply of timber. As heretofore noted, the Gulf States Construction Co. is to build the line. Chester H. Pond of Morehead, Miss., is president of the railroad, and John A. Lewis of Meridian, Miss., is at the head of the construction company.

### BIG TIE CONTRACT.

#### Illinois Central's Progress in the South—A Rumor Denied.

The Illinois Central Railroad Co. has, it is reported, contracted with the Lord & Ayres Tie Co. of Chicago for 1,500,000 railroad ties, and the tie company will obtain them from leading saw-mill operators in Mississippi. Before being used these ties are to be chemically treated, and they will, it is stated, be sufficient for 500 miles of track. Some of them will be used for repairs and some for the new double track, an important piece of which is being put in between Memphis, Tenn., and Fulton, Ky. This is a distance of 125 miles, and eighty-five miles are under contract. As fast as the new track is completed it will be put in service, as the business of the road, particularly at Memphis, shows up heavily. A report from that city says that 1400 to 1600 cars of freight are being handled through the Memphis terminals daily, as compared with an average of about 1200 cars per day last year.

President Stuyvesant Fish of the railroad is quoted as saying that, excepting the double-tracking, there is very little work being done on the line, and that even the construction of second track, owing to the demand for equipment during the winter, will probably not be pushed with great rapidity. Concerning the gossip that the Illinois Central intended to enter Mobile over the Mobile, Jackson & Kansas City Railroad or through the Memphis & Gulf into Pensacola, he is reported as saying that there is absolutely no truth in such talk.

### DOUBLE-TRACK BRIDGE.

#### Pennsylvania Will Build One Over the Susquehanna River.

The Philadelphia, Washington & Baltimore Railroad Co. (Pennsylvania system) has sold \$10,000,000 of first-mortgage 4 per cent. 20-year bonds to Kuhn, Loeb & Co. of New York, and the proceeds will, it is stated, be used to pay for extensive improvements along the line, including new machine shops and a roundhouse, a new double-track bridge across the Susquehanna river and the share of the company in the building of the new Union Station in Washington.

The company will, it is further reported, establish through a contract with the Union Trust & Storage Co. warehouses along its line in the District of Columbia.

Concerning the report that the contracts had actually been awarded for the new Union Station at Washington, Chief Engineer W. H. Brown is reported quoted as saying that before the contracts are given out plans will be submitted to the commissioners of the District of Columbia, and that this will be done by D. H. Burnham, the architect, of Chicago.

### Stockton Southeastern.

George F. Wolfe, president of the Stockton Southeastern Railroad Co., 303 Temple Block, Kansas City, Mo., writes

the Manufacturers' Record saying: "Our present survey is from Eldorado Springs, Mo., connecting with the Missouri, Kansas & Texas Railway, to Stockton, Mo., a distance of nineteen miles. We intend later to extend the line south to Springfield, Mo., and thence south into the zinc and lead mining district of Arkansas a distance of 145 miles.

"The region traversed is typical South-west Missouri territory, being hilly, with considerable loose and solid rock. Owing to money and other conditions, the nineteen miles is all that will be built at present, and we will be ready, I think, by January 1 at least to let contract with some construction company, and possibly by December 1. Will use 50-pound rails, have one steel bridge 100 feet span, five pile bridges.

"We have made survey, maps, profiles, estimates and have secured the right of way for the nineteen miles. We are capitalized at \$400,000."

### IMPORTANT EXTENSION.

#### A Line Which Might Be Pushed Through to Birmingham.

The report that the Union Springs & Northern Railway will build an extension is confirmed by President W. M. Blount of the company, who writes from Union Springs, Ala., to the Manufacturers' Record saying that it is proposed to extend from Fort Davis to Rockford, sixty-three miles, next year.

The Union Springs & Northern Railway, at present only eight miles long, is a standard-gauge line running from Union Springs, the county-seat of Bullock county, Alabama, on the Central of Georgia Railway, directly north to Fort Davis, which is just inside of Macon county on the Seaboard Air Line. The proposed extension to Rockford will run northwest through Macon and Elmore counties into Coosa county, and will be in the direction of Birmingham. The construction of this line through to that great steel and iron producing district might give the Seaboard Air Line a very direct route from Birmingham to Savannah.

### AFTER CANNEL COAL.

#### Licking River Railroad Proposes to Build Extension.

The Licking River Railroad Co. of Yale, Ky., is planning to extend its line to develop the cannal-coal fields of Morgan county in that State. The company has recently built an extension of three miles to Devil's creek, which is about twelve or fourteen miles from West Liberty and the coal fields, and General Manager E. R. Miller writes the Manufacturers' Record as follows:

"We are now negotiating with Eastern capitalists for the extension of our road to the Elk Fork, which, in fact, would tap all the cannal coal Morgan county has. This would place upon the market the cannal coal of this whole territory, and would within a few years throw a standard-gauge railroad from Salt Lick to West Liberty. The resources of Eastern Kentucky are little known to the average man. If they were, it would not take long to push a road into this field. We contemplate, if present plans mature, an early extension to West Liberty, Ky."

### Railway, Lights, Water and Ice.

Mr. S. S. Bush, general manager of the Pascagoula Street Railway & Power Co. of Scranton, Miss., writes from Louisville, Ky., to the Manufacturers' Record that results have exceeded expectations on the railway, which was put in operation October 16. The line is a single-track interurban electric railway eight and one-half miles long, running from

Beach Park, a pleasure resort of twenty acres belonging to the company at Pascagoula, Miss., through Scranton and East Side to Moss Point, Miss. A 30-minute schedule is in operation between all points, and freight and express business is handled.

The power-house and office is in Scranton, and the company also operates the Scranton Water-Works, the electric-light business for the four towns and the ice business, all under one roof and with one centralized management.

### Railroads and Steamers.

According to a dispatch from Laurel, Del., a combination has been formed to build railways and operate steamers in the interest of prominent fruit and truck canners, for the securing of raw material and for distributing products. Railroads are to be constructed and steamers operated in North Carolina, Virginia, Maryland and Delaware, and the people interested in the combination, according to the report, are the Dallas Marvel Co. and Lewton Ward & Co. of Laurel, Del.; the Wycomico Lumber Co. of North Carolina, Schofield, Barnes & Co. of Pocomoke City, Md.; Robinson & Co. of Sharptown, Md., and Crane, Hynson & Valliant of Chestertown, Md. The officers are: President, Harvey Marvel; general manager, Albert Robinson; secretary and treasurer, W. E. Valliant. The headquarters, it is stated, will be at Laurel.

### Greenville's Railway.

All the rails and other track material for the new street railway at Greenville, Miss., are reported to have arrived, and the construction of the line will, it is stated, be started immediately by the Delta Electric Light, Power & Manufacturing Co. The plan is to build about two miles of line immediately, the trolley poles being already erected on that route. A second route is to be built next spring, but it is expected to have the first line in operation before Christmas, the cars having been purchased and they will be there by the time the track is completed. The company proposes to also double the capacity of the plant for electric lighting, and it will build a car barn beside the power-house.

### Railroads of Texas.

A preliminary synopsis of tables to appear in the twelfth annual report of the Texas Railroad Commission shows that at the end of the fiscal year on June 30, 1903, there were 11,629 miles of railroad track in Texas, excluding logging, private and electric roads, lines in process of construction and yard tracks and sidings. This is an increase of main line and branches of 412 miles as compared with the next preceding year. The gross earnings for these roads in that State were \$62,633,949, of which \$45,010,846 were from freight traffic and \$12,104,743 from passenger traffic, the remainder being from mails, express companies and other sources.

### Getting New Equipment.

President A. F. Daley of the Wrightsville & Tennille Railway Co. writes from Tennille, Ga., to the Manufacturers' Record saying that the company is now receiving sixty new freight cars from the Georgia Car & Manufacturing Co. of Savannah, Ga., as follows: Thirty-five flat cars of 60,000 pounds capacity each and twenty-five box cars of 70,000 pounds capacity each. The railroad company has also placed an order with the Baldwin Locomotive Works of Philadelphia for two new engines. Some improvement is also being made to the track, new 56-

pound rails being laid in place of 200 tons of worn-out rail.

#### Branch in Tennessee.

According to advices from Chattanooga, Tenn., a branch is being built from Wetmore, on the Atlanta, Knoxville & Northern Railroad, to Cleveland, Tenn., and the line, it is stated, is being constructed in the interest of the Tennessee Copper Co.'s Railroad near Ducktown. The object of the new road, it is stated, is to enable the Copper Company to ship its product direct to Chattanooga, instead of sending it around from Knoxville. The branch will, according to the report, pass through a rich mineral and timber region that is yet undeveloped. Several coal mines will probably be opened along the new line.

#### Kanawha & Pocahontas.

A report from Fayetteville, W. Va., says that the contract has been let for building five miles of railroad to extend to Paint Creek branch to the mouth of Mossy creek. The line is to be known as the Kanawha & Pocahontas. This is in the region where the Gallego Coal & Land Co. is developing a tract which is part of 30,000 acres owned by it. This land extends for about ten miles along Paint Creek below Mossy creek, and includes considerable of the Cabin Creek coal fields. C. H. Voelgle of Mansfield, Ohio, is president of the company, and C. F. Ackerman is general manager.

#### Missouri & Iowa Southern.

Col. A. L. Strang of Sedalia, Mo., is reported to have secured the necessary capital to build the Missouri & Iowa Southern Railway, the first section of which, fifty-five miles long, is to extend from Sedalia via Marshall to Miami, Mo., connecting with the Wabash and the Burlington systems. It is also proposed to build south from Sedalia to Springfield and from Miami to the Iowa State line, completing, it is said, a trunk line which will have connections from Duluth to Galveston. The road will, it is also stated, furnish an outlet for extensive coal fields in Saline county, Missouri.

#### Building to Mines.

Mr. T. S. Abbott, chief engineer of the Coahuila & Zacatecas Railway, writes from Saltillo, Mexico, saying that the company has under construction a branch leaving the main line sixty-five miles south of Saltillo and running northwest twenty miles to the mining district of San Pedro Ocampo, in the State of Zacatecas. For this line the company will use the Shay geared locomotives. It is contemplated to make an extension of this branch to the Bonanza mining district, six miles, also in the State of Zacatecas.

#### Arkansas Southern.

President G. W. Hunter of the Arkansas Southern Railroad writes the Manufacturers' Record that the preliminary survey for the extension from Winnfield to Alexandria, La., fifty miles, has been completed; that the company has made final location for about one-third of that distance, and is now purchasing right of way. The construction of the extension will be undertaken as soon as the engineer's estimates can be prepared, bids received and contracts awarded.

#### New Equipment.

The Atlantic & Birmingham Railroad has, it is reported, ordered eight new Baldwin locomotives, ten passenger coaches, 350 freight cars and steel rail for ten miles of line.

The Atlantic Coast Line will, it is reported, build 500 flat cars of 60,000 pounds

capacity each at its shops at Wilmington, N. C.

The Seaboard Air Line has placed an order for thirty locomotives with the Baldwin Locomotive Works.

#### Railroad Notes.

President Samuel Spencer of the Southern Railway Co. is reported as saying that the new Union Station in Atlanta, Ga., will cost the Atlanta Terminal Co. not less than \$2,000,000.

The Louisville & Nashville Railroad Co. is reported to have ordered 25,000 tons of rails from the Tennessee Coal, Iron & Railroad Co., the rails to be manufactured at Ensley, Ala.

A dispatch from Guthrie, O. T., reports that the Enid & Anadarko Railroad from Enid to Waurika, 150 miles, has been transferred to the Rock Island system, which has operated it since it was completed last year.

A deal is reported closed by C. W. Ruth & Co. of Pittsburg, Pa., for building the proposed interurban electric railway from Nashville to Gallatin, Tenn., and also from Nashville to Mt. Pleasant via Franklin and Columbia.

The Trinity & Brazos Valley Railway is building passenger depots at Hillsboro, Cleburne, Mexia, Hubbard City, Kennard, Maxey, Coolidge, Covington, Malone and Osceola, Texas. Two freight depots are also being constructed.

The Tremont & Gulf Railroad Co. of Tremont, La., informs the Manufacturers' Record that it will build eight miles of main line southward next year, and also another branch six miles long. It has recently completed eight miles of branch road.

Mr. George M. Wright, general manager of the Union & Glenn Springs Railroad Co., informs the Manufacturers' Record that the conversion of the line from steam to electricity will, it is hoped, be completed by the first of the new year. This railroad is four miles long from Union, S. C., to Buffalo.

The Nacogdoches & Northeastern Railway, which is, according to a dispatch, to extend from the Hayward Syndicate Mill at Nacogdoches to Oil City, Texas, has let the contract for clearing right of way, which is along the roadbed of the old Dallas & Red River Valley Railway, which was graded fifteen years ago.

It is reported from Vera Cruz, Mexico, that Jose L. Perez & Sons, merchants of Tlaxotlan, in the State of Vera Cruz, are organizing a company to build a railroad from Saltillo to San Andres Tuxtla, about thirty miles. If constructed the line will furnish a rich tobacco-growing country with means of transportation.

Mr. F. E. Dewey has been appointed second vice-president and general manager of the Mobile, Jackson & Kansas City Railroad, relieving President Stratton of the duties of general manager and succeeding Mr. W. H. McIntosh, who resigned as second vice-president. The new appointee will be in charge of the traffic, transportation, maintenance of equipment and maintenance of way departments, with office at Mobile, Ala.

The Northern Central Railway Co. reports the following comparison of earnings and expenses for September, 1903, and for the nine months ended September 30 with the same periods of 1902: September, 1903, gross earnings, increase, \$174,300; expenses, increase, \$172,400; net earnings, increase, \$1900. For the nine months ended September 30 gross earnings, increase, \$1,653,600; expenses, increase, \$1,573,700; net earnings, increase, \$79,900.

## INDUSTRIAL NEWS OF INTEREST.

#### Kentucky Coal Mines for Sale.

Profitable coal-mining operations have been reported from Kentucky for some years. The owner of an established mine with a daily output of 450 tons in that State is desirous of selling his property. Full particulars can be obtained by addressing C. C. Christopher, Nashville, Tenn.

#### Wants a Woodworking Outfit.

The owner of a profitable drug and confectionery store, together with a physician's practice said to be worth \$2500 per year, wants to exchange for a boiler, engine and spoke or stove machinery, new or second-hand. Further details can be obtained by addressing Box 55, Maiden, Mo.

#### A Patent on Portable Stove.

Manufacturers interested in new devices in the stove line are advised that the patent on a portable stove is now offered for sale. This is intended for stoves in laundry and heating rooms. The devices embodied in the patent are said to meet a demand now existing. Full particulars can be obtained by addressing E. C. Leonard, Thompson, Pa.

#### Cotton Mill for Lease.

Manufacturers desirous of securing a cotton-mill property are advised that Gray's Mills, on the Patuxent river, near Baltimore, can be secured. This includes a four-story stone building, with additional structures, and recently installed 300-horse-power water, steam and electric plant. This plant is suitable for any kind of textile manufacture. For information address V. G. Bloede, Station D, Baltimore, Md.

#### Good Investment for Factory.

A good investment for any factory that has exhaust pipes is the Burt Exhaust Head. This head saves money for the factory owner, because no water or oil can get past it to rot the roof or disfigure walls. It allows only the dry steam to escape. The Mississippi Lumber Co. of Quitman, Miss., used a 10-inch Burt and then reports its roof as "dry as a bone." Burt Manufacturing Co., Akron, Ohio, manufactures the Burt Exhaust Head.

#### Peck-Hammond Systems.

The contract for mechanical heating and ventilating in a fine new high-school building to be erected at Junction City, Kan., has been awarded the Peck-Hammond Company of Cincinnati, Ohio, for placing its improved system. The contract for installing a system of mechanical ventilation in the large department store of the Mabley & Carew Company, Cincinnati, was also awarded to the Peck-Hammond Company, which is now installing the plant.

#### Boiler Plant for Sale.

The steady demand now existing for boilers makes the operation of boiler works profitable when conducted on proper business lines. An opportunity in this direction is comprised in a boiler plant located at New Albany, Ind., which is now offered for sale. This is a modern boiler and sheet-iron manufacturing establishment, equipped with air, electrical, and other late improvements. Prospective buyers can obtain information by addressing Herman Joseph, 316 East Main street, Louisville, Ky.

#### P. Byrne, Consulting Engineer.

It is announced that the partnership between Messrs. Aliber & Byrne, consulting engineers, has been dissolved by mutual agreement, Herman Aliber retiring. P. Byrne will continue in business as civil, mining, bridge, mechanical and consulting engineer, offices remaining as heretofore at 1909½ First avenue, Birmingham, Ala. Mr. Byrne has been very successful in his chosen field, and has engineered many municipal water-works and other plants and various other engineering work throughout the South.

#### Helmick Rebuilds at Once.

A portion of the extensive plant of the Helmick Foundry & Machine Co. was badly damaged by fire on October 22, but there will be little delay in filling the company's orders. It is announced that the company will at once rebuild the foundry and blacksmith shop, to which the fire was confined, and in a few weeks will have the equipment in better shape than ever before to take care of its growing trade for coal and coke-plant equipments, mine cars, castings, etc. Owing to the fact that the foundry work was well in advance of the other work, the machine shop continues in operation. This Fairmont (W. Va.) industry has developed an extensive demand for its product, especially in the West

Virginia coal fields. But other sections where natural resources are being developed are also supplied.

#### Factory Time Checks.

Progressive manufacturers are presumably on the lookout to perfect the operation of their establishments in every detail. Those who are in the class mentioned should investigate factory time checks if they have not already done so. These checks simplify matters to a considerable extent and enable the manufacturer to plan more perfectly the exact cost of his products. The American Railway Supply Co., 24 Park Place, New York, can give information regarding the latest factory time checks now used by well-known operators in the manufacturing world.

#### Brick Works for Sale.

Supplying brick for the erection of buildings of all kinds is a profitable undertaking in this time of building activity throughout the South. The owner of a plant for manufacturing 30,000 bricks daily, located within fifty miles of Atlanta, desires to sell its property because of larger enterprises engaging its attention. A complete modern equipment, together with a 20-year lease on twenty acres of clay in a locality where wood fuel is cheap, are included. Full particulars can be obtained from the Cartersville Brick Co., Cartersville, Ga., which owns the plant mentioned.

#### Fertile Lands in Arkansas.

St. Francis valley is a famous fertile territory in Arkansas. It is exceptionally well adapted for agriculture and stock-raising. A tract of 1140 acres in the valley seven miles north of Earl, Crittenden county, is now on the market. The Tyrone river makes a bend and runs on three sides of the property, which has fine natural drainage, railroad facilities within half a mile, all woodlands lying low, and offers an exceptional opportunity for development for fine stock or produce farm. This tract will be sold in 320-acre blocks if required. Further particulars can be obtained from Messrs. Knott & Neely, Crawfordsville, Ark.

#### Largest Door in the World.

Many of the products of American factories form subjects of general interest to readers aside from any value they may have to the industrial world. One such product is what is stated to be the largest door in the world. This door is 35 feet 6 inches wide by 20 feet high, weighs 7000 pounds, and operates with perfect ease. It was built for an electrical car barn by the Kinnear Manufacturing Co. of Columbus, Ohio. The company named is noted for the Kinnear steel rolling doors and shutters for all kinds of structures. Parties likely to need such doors and shutters, no matter how small or large, are invited to write for catalogue "K."

#### For Accurate Measuring.

All who have occasion to measure are necessarily interested in securing only the most accurate results. The manufacture of measuring lines must be conducted with the utmost care and attention, and the finished product needs to be carefully tested before it is offered to the user. The Lufkin Rule Co. of Saginaw, Mich., has been especially successful in this direction. Its rules of various kinds are used throughout the world by the artisan, contractor, engineer, manufacturer and a multitude of other workers. Lufkin steel tapes are said to be indispensable for accurate work. Write the company for facts concerning its offerings.

#### A Good Method for Buyers.

Throughout the South there are many manufacturers, contractors and others engaged in active industry who have occasion from time to time to purchase manufactured articles in the Pittsburgh market. Such product as steel rails, wrought-iron pipe, cold-rolled shafting, steel and iron products, coal, coke and all kinds of specialties may be mentioned as some of the products that must be obtained. Often it is impossible for buyers to visit Pittsburgh in order to make contracts, and frequently they do not want to give orders by mail, preferring, for many reasons, that a personal representative make arrangements for them. This representation is being filled for numerous purchasers by Messrs. Edgar M. Moore & Co., 914 Farmers' Bank Building, Pittsburgh. They have been very successful, having bought and sold over \$600,000 worth of products in the last two years. They want more trade, and solicit correspondence from consumers in the Southern territory. Their plan is to act as personal representative, charging a small commission for their

[Continued on Page 314.]



# CONSTRUCTION DEPARTMENT.

## TO OUR READERS!

In order to understand and follow up properly the Construction Department items, please bear in mind the following statements:

### EXPLANATORY.

The Manufacturers' Record seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

\*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

### ADDRESS FULLY.

To insure prompt delivery of communications about items reported in these columns, the name of one or more incorporators of a newly incorporated enterprise should be shown on the letter addressed to that town, or to the town of the individual sought, as may be shown in the item, as sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. This will help to insure prompt delivery of your communication, although it is inevitable that some failures on the part of the postal authorities to deliver mail to new concerns will occur.

### WRITE DIRECTLY.

It is suggested to advertisers and readers that in communicating with individuals and firms reported in these columns a letter written specifically about the matter reported is likely to receive quicker and surer attention than a mere circular.

## ALABAMA.

Anniston—Furniture Factory.—Company previously reported to be organized for erection of furniture factory has been incorporated as the Anniston Furniture Factory with capital of \$50,000 and B. M. Markstein, president; W. H. McKleroy, vice-president, and D. Harry Markstein, secretary-treasurer.

Birmingham—Land Improvement.—Helena Heights Land Co. has been incorporated, with capital of \$14,000, by J. A. Emery, C. W. Blackington and H. J. Kribbs.

Birmingham—Land Improvement.—Fairview Park Land Co. has been incorporated, with capital of \$14,000, by J. A. Emery, L. H. Tutwiler, R. H. Ford and others.

Birmingham—Stone Company.—North Alabama Stone Co. has been incorporated, with capital of \$25,000, by W. C. Shackelford, J. F. Johnson and J. V. Allen.

Birmingham—Coal Mines, etc.—The Sayre Manufacturing, Coal & Coke Co., previously organized and which has been acquiring coal properties near Birmingham, is preparing for the development of its purchases. It is rumored that the company contemplates building an iron furnace later on.

Ensley—Sewerage.—City has voted issuance of bonds for construction of sewerage system. Address The Mayor.

Fruiturst—Gold Mines, etc.—It is reported that F. F. Taylor and associates have purchased 10,000 acres of land and will organize company to develop gold mines, build lumber plant, develop agricultural resources, etc.

Gadsden—Mercantile.—Chartered: Gadsden Grocery & Feed Co., with capital of \$1200, by R. A. Harris (president) and others.

Gadsden—Land Improvement.—Pioneer Land & Improvement Co. has been incorporated, with capital of \$14,000, by James A. Wood of Shelbyville, Tenn.; Gus Lee, James E. Strong, S. P. Moore, F. B. Keiser and others.

Gadsden—Manufacturing.—Frank P. Heifner of Georgia contemplates establishing a

factory, the character of which is not stated. Jasper—Water-works.—P. Byrne, 1909½ First avenue, Birmingham, is preparing plans and specifications for the city's proposed water-works, and the construction will commence without delay.

Montevalo—Electric-light Plant.—The Alabama Girl's Industrial School will install electric-light plant. Orders for all necessary machinery have been placed and contract for wiring and construction work will be awarded November 24. For further information address Dr. F. M. Peterson.\*

Selma—Portland-cement Plant.—Great Southern Portland Cement Co. will be the name of the corporation mentioned last month as to be organized for establishing a cement plant. Cement rights have been purchased for \$40,000 on land near Selma, and it is stated that about \$1,000,000 will be expended to build a plant of 2000 barrels capacity daily. E. J. Hoag is president; F. D. Sanborn, second vice-president; W. R. Batcheller, treasurer, and James E. Whitney, secretary, all of Boston, Mass., and B. F. A. Saylor of Rome, Ga.

Thomasville—Saw-mill.—Kyser, Smith & Smith of Birmingham are reported as to build a saw-mill at Thomasville.

## ARKANSAS.

Baldwin—Coal Mines.—John Jay and E. A. Jay will develop a coal mine.

Dumas—Gas Plant.—W. W. King and H. W. Copeland will install an acetylene gas plant.

Hartford—Coal Mines.—Hoffman Coal Co. has been incorporated, with capital of \$10,000, for development of coal mines, by E. W. Hoffman, W. W. Hoffman and Wm. J. Hoffman.

Hot Springs—Slate Quarries.—Ozark Slate Co., Frank Dameron, vice-president, is preparing to install equipment of machinery for quarrying slate.

Little Rock—Drug Company.—Peerless Drug Co. has been incorporated, with capital of \$40,000, by H. B. Covey, B. F. Culbertson and W. M. Jordan, for manufacture of patent and proprietary medicines.

Little Rock—Flour Mill and Elevator.—T. H. Bunch has purchased the Pine Bluff Mill & Elevator Co.'s plant and will remodel same.

Little Rock—Ice Plant.—Retail Grocers' Ice Co., mentioned last week, has awarded contract for the installation of machinery to increase its plant's daily capacity from thirty to sixty tons.

Monticello—Paint and Roofing Plant.—G. S. Ellinger and Willard White, both of Chicago, representing the Standard Carbonite Co., contemplate developing ochre and lignite deposits and establishing a plant for the manufacture of paints and roofing at Monticello.

Piggott—Buggy-top Support Factory.—Banner Manufacturing Co. has been incorporated, with capital of \$12,000, for manufacture of a patent buggy-top support. M. L. Carraway, T. W. Harlan, B. A. Harlan, E. L. Carraway, J. H. Thomas and others are incorporators.

Pike City—Timber Land.—Edward Ryan of Little Rock, Ark. (representing Chicago capitalists), has closed the purchase of 15,000 acres of timber land in Pike county, the property to be developed. Mr. Ryan and associates also expect to purchase and develop 6000 acres of asphalt lands, investing possibly \$250,000 in the developments.

Pine Bluff—Mattress Factory.—Pine City Bedding Co. will erect building and equip as mattress factory, as lately reported, to have capacity of seventy-five mattresses per day of ten hours; capital to be invested \$5000.

Stamps—Land and Lumber Company.—Union Land & Lumber Co. has been incorporated, with capital of \$1,000,000, by Wm. Buchanan, Wm. C. Brown, Jas. A. Buchanan and Henry Moore.

## FLORIDA.

Cedar Key—Saw-mill.—Joseph Boothby is reported as to build a saw-mill.

Gainesville—Lumber Plant.—Gainesville Planing & Coffin Co. is the correct title of company referred to last week as incorporated with \$20,000 capital. It has 140x160-foot building, equipped for daily output of 25,000 feet of lumber, and will install machinery for a daily output of about forty coffins. D. M. Riles is manager.\*

Jacksonville—Turpentine Plant.—R. V.

Douglas and associates have purchased about 40,000 acres of timber land and will establish a turpentine farm, build saw-mills, etc. It is stated that \$135,000 was the purchase price for the property.

Jacksonville—Mercantile.—Isleman Grocery Co. has been incorporated with capital stock of \$10,000 and Sol Isleman, president; S. S. Goffin, vice-president, and M. A. Dziatynski, secretary.

Manatee—Ice Factory.—Palmetto Ice Factory will be established at cost of \$30,000.

Pensacola—Bridge.—Contract for construction of bridge across Bayou Texar has been awarded Chas. H. Turner at \$235.

Pensacola—Lumber Plants.—The Export Lumber Co. has been organized, with J. R. Saunders, president; H. H. Boyer, vice-president, and J. T. Whiting, secretary, for exporting lumber. The company controls two large saw-mills, owned by separate companies, together with large tracts of timber land. Capital stock is \$50,000. Offices in the Thiesen Building.

St. Augustine—Fire-alarm System.—City has contracted with St. Augustine Telephone Co. for installation of fire-alarm system.

Tallahassee—Lumber Plant.—Blasingame & Morgan Lumber Co. of Moultrie, Ga., has purchased 23,000 acres of timber lands near Tallahassee and will build large lumber mills.

Tampa—Garbage Crematory.—The city council has under consideration the construction of a garbage crematory for which \$150,000 will probably be available. Address The Mayor.

Tampa—Mining, etc.—Little Elfrieda Mining & Tunnel Co. has been incorporated, with capital stock of \$500,000, for mining and refining all kinds of ore, etc., by C. B. Barton, W. C. Caswell and P. H. Cason.

West Palm Beach—Fishery.—Chartered: The East Coast Fish Co., with a capital of \$20,000, by John D. Beach, W. P. Beach, W. R. Healy and George B. Curry.

## GEORGIA.

Cedartown—Grocery.—John Turhune, Jr., Barclay Turhune and Miss Jennie Adams have incorporated the Turhune Grocery Co., capitalized at \$5000.

Columbus—Woodenware Factory.—J. T. Percival of Columbus, M. M. Goodman of Lynchburg, Va., and Northern capitalists will establish a woodenware factory in which about \$150,000 will be invested.

Jesup—Water-works.—Reports state that a water-works system will be constructed. The Town Clerk can probably give information.

Kennesaw—Gold Mines.—Kennesaw Mining, Improvement & Exploration Co. (noted last week under Pulaski, Tenn., as incorporated) will develop gold mines. Its capital is \$50,000, \$10,000 of which has been paid in, and developments are now in progress. A. H. Brown of Kennesaw is the engineer in charge.

Macon—Machinery Depot.—F. F. Davis, T. J. Hammill, E. V. Davis, each of Florida, and J. F. Travis of Macon have incorporated the Southern Machinery & Supply Co. with capital stock of \$50,000.

Savannah—Distillery.—Sigo Myers, Edward F. O'Connor and George Brown have incorporated the Big Springs Distilling Co. with capital stock of \$300,000 and privilege of increase to \$1,000,000. They propose establishing distilleries for the manufacture of whiskey and other liquors.

Savannah—Mattress Factory.—J. H. Parham of Chattanooga, Tenn., contemplates establishing at Savannah a plant for the manufacture of mattresses, the initial investment to be \$5000. Furniture may also be included in the output.

## KENTUCKY.

Deane—Lumber Company.—Hall Lumber Co. has been organized, with capital of \$2100, by Hiram Hall and A. L. Meade.

Elizabethtown—Planing Mill.—W. H. Gardner will build a planing mill.

Harrodsburg—Grocery.—Incorporated: The N. L. Curry Grocery Co. by N. L. Curry, C. W. Curry, F. D. Curry and C. L. Henderson. The capital stock is \$10,000.

Jonesboro—Coal Mines.—Jonesboro Coal Co. has been organized, with capital of \$45,000, for development of coal lands, by H. R. Jones and others.

Lackey—Oil Wells.—Lackey Oil Co. has

been incorporated, with capital of \$25,000, for development of oil lands.

Louisville—Stove Foundry.—The O. K. Stove & Range Co., Floyd and A streets, will erect an additional foundry of brick and stone to cost about \$10,000. J. J. Gaffney is preparing plans and specifications for the structure.

Louisville—Electric-power Plant.—Louisville Lighting Co. will remodel its power plant, and D. F. Murphy & Bro. are preparing plans and specifications for the improvements.

Middlesborough—Coal Mines.—E. T. Camp of Knoxville, Tenn., has purchased 550 acres of coal land near Middlesborough at \$17,000 and will open mines.

Owensboro—Furniture Factory.—It is reported that R. O. Evans & Co. of Green Bay, Wis., will remove their school-furniture factory to Owensboro and there organize and incorporate a company capitalized at \$250,000, of which amount \$75,000 will be taken by Owensboro investors.

Paducah—Peanut Factory.—Southern Peanut Co., reported incorporated with \$20,000 capital last week, has an established plant, including four-story building, 56x94 feet, with full equipment of machinery for handling peanuts. Offices at 205 Jefferson street.

Rockhouse—Telephone System.—Rockhouse Telephone Co. has been incorporated, with capital of \$9000, by John Collins and others.

Whitesburg—Mercantile.—Chartered: W. M. Webb & Co., with capital of \$7000, by W. M. Webb and others.

## LOUISIANA.

Covington—Land Improvement.—St. Tammany Parish Fair & Improvement Co. has been organized, with capital of \$15,000, and J. S. Jones, president; W. G. Kentzel, vice-president; J. Louis Smith, secretary, and P. E. Theriot, treasurer.

Donaldsonville—Levee Dam.—Atchafalaya and Lafourche basin levee board will issue \$120,000 of bonds to provide funds for damming Bayou Lafourche; A. H. Gay, president of board.

Lake Charles—Saw-mill.—H. B. Becklemire of Mt. Pulaski, Ill., and J. Perry of Chicago, Ill., will erect \$25,000 saw-mill near Lake Charles for development of timber lands recently purchased.

Lake Charles—Land Developments.—Mutual Land & Development Co., recently incorporated with \$200,000 capital, has organized with Charles M. Richard, president; John H. Poe, secretary, and Frank Mace, treasurer.

Monroe—Cotton Mill.—Ouachita Cotton Mills' stockholders will meet November 5 to consider increasing capital for the purchase of additional machinery; present equipment is 2436 spindles and 75 looms.

New Iberia—Sewerage System.—City contemplates constructing sewerage system. Address The Mayor.

New Orleans—Iron-bed factory.—Crescent Bed Co., Limited, awarded contract mentioned last week to W. T. Carey & Bro. at \$16,500 for erection of factory building. This new structure will be four stories high, 65x150 feet, after plans by Albert Drennen, and will be equipped with machinery to increase the company's output 500 iron beds per day.\*

Pointe Coupee—Saw-mill.—Northern Lumber Co. (headquarters at Des Moines, Iowa) will build another saw-mill to assist in cutting the stumpage on 20,000 acres which it has been working for a year.

## MARYLAND.

Baltimore—Drug Manufacturing.—Incorporated: National Drug Co., to manufacture drugs and drug specialties, by Frank W. Kroh, Frank A. Roedy, John T. Yewell, Robt. W. Bench of Baltimore, Md., and Harry W. Davis of Wilmington, Del. The capital stock is \$250,000.

Baltimore—Railroad Shops, etc.—Philadelphia, Baltimore & Washington Railroad Co., which has just concluded a sale of \$10,000,000 of bonds, will expend a large portion of this amount for new machine shops and roundhouse, new bridge and double track across the Susquehanna river, etc. Company's general superintendent is E. L. Brooks of Philadelphia.

Washington, D. C.—Moving-picture Devices.—Stilson Hutchins, Thomas Armat, Wm. J. Dance, Lee Hutchins and R. E. L. Yellott are organizing company to manufacture and

introduce moving-picture devices invented by Mr. Armat. Capital stock will be \$500,000.

Washington, D. C.—Portable Horse Stall.—Geary B. Eppley, Frederick Bex and Oliver B. George have incorporated the Eppley Portable Horse Stall Co. with capital of \$50,000.

Webster—Machine Shop.—Harry M. Smith will rebuild machine shop recently reported burned; building will be 30x60x14 feet.

#### MISSISSIPPI.

Belzoni—Electric-light and Water Plants.—The city has voted \$30,000 of bonds for the construction of its proposed water-works and electric-light plant. Address The Mayor.

Edwards—Water-works.—City contemplates constructing system of water-works. Address The Mayor.

Greenville—Electric-light Plant.—The Delta Electric Light, Power & Manufacturing Co. contemplates expending about \$40,000 to erect new buildings and install additional machinery for increasing the capacity of its electric-light and power plant.

Greenville—Street Paving.—City has awarded contract to the Southern Paving & Construction Co. of Chattanooga, Tenn., for paving street with vitrified brick on an eight-inch foundation of concrete.

Gulfport—Publishing.—Chartered: Gulfport Publishing Co., with capital of \$10,000.

Gulfport—Real Estate.—Gulfport Investment Co. has been incorporated, with capital of \$10,000.

Louisville—Pressed-brick Works.—Louisville Pressed Brick Co. has been organized and will establish plant for manufacturing pressed brick.

Magnolia—Water-works.—City has voted issue of \$25,000 of bonds for water-works previously reported. Address The Mayor.

McHenry—Electric-light Plant, Water-works, etc.—The McHenry Improvement Co. will be incorporated and organized to construct water-works, build electric-light plant, erect ice factory and establish other enterprises. G. A. McHenry, H. B. Bostick, J. R. Pratt, George R. Burton, J. F. Bennett and others are the organizers. Capital stock is \$30,000.

Sandersville—Mercantile.—John Watts, J. E. Parker and S. Q. Donald have incorporated the Watts Mercantile Co. with an authorized capital of \$30,000.

Tunica—Land Company.—Stimpson Land Co. has been incorporated, with capital of \$4075.

Winona—Water-works.—City has not voted issue of bonds for construction of water-works, as lately stated. Contract has been let C. R. Kelso for construction of system of water-works (private ownership), and C. L. Dabney is engineer in charge.

#### MISSOURI.

Joplin—Electric-light Plant.—It is reported that company is being organized, with capital stock of \$1,500,000, for erecting electric-light and power plant. Names of those interested will be announced later.

Kansas City—Grain Elevator.—Harroun Commission Co. has purchased for \$15,000 the old "Sun" elevator, which has a capacity of 250,000 bushels. This building will be remodeled, equipped with electric fire-alarm boxes and otherwise improved, and a fireproof storage addition will be erected.

Leas Summit—Electric-light Plant.—A. G. Rittenhouse will build electric-light plant for 3000 lights at a cost of \$5000.

St. Louis—Factory.—M. W. Helmann has permit to erect two-story brick factory building to cost \$14,000. Character of plant is not stated.

St. Louis—Paint and Color Company.—Great Western Paint & Color Co., with capital of \$24,000, has been incorporated by Frederick H. Nieman, John H. Nieman, John R. Harkins and others.

St. Louis—Mercantile.—Chartered: Rost Mercantile Co., with capital of \$8000, by Chas. Rost and others.

St. Louis—Publishing.—Valley Publishing Co. has been incorporated, with capital of \$30,000, by Charles M. Biggers, Robert Love, Edward Mead and C. H. Wetmore.

St. Louis—Paint Factory.—Murphy Paint Manufacturing Co. has been incorporated, with capital of \$100,000, by Richard H. Murphy, Almee Buckley, H. M. Tatro, James H. Brown and others.

St. Louis—Real Estate.—Kensington Realty & Investment Co. has been incorporated, with capital of \$6000, by Frank X. Groschan, Herbert H. Aid, Clarence P. Aid and others.

St. Louis—Electric-power Plant.—The Suburban Railroad Co. has had plans completed for the construction of power plant to re-

place building lately burned. New structure will be one story high, 131x193 feet, and cost \$55,000.

St. Louis—Real Estate.—Minerva Investment Co. has been incorporated, with capital of \$2000, by John W. Rorer, James P. Young and others.

St. Louis—Automobile Supplies.—St. Louis Automobile & Truck Co. has been incorporated, with capital stock of \$30,000, by E. Ruebel, C. J. Briner and Ferd C. Schwedtmann to deal in automobiles and supplies.

St. Louis—Publishing.—Horace B. Cockrell, Mark B. Chapman and J. A. Baker have incorporated the Methodist Publishing Co. with capital stock of \$50,000.

St. Louis—Lead Mining.—Germania Lead Mining Co. has been incorporated, with capital stock of \$125,000, by August Sacher, Edward J. O'Brien, Richard J. Murphy and others.

Tipton—Zinc Mines.—Fairmont Land & Zinc Co., recently chartered, has organized to develop zinc lands near Tipton, and A. B. McDonald will be superintendent. The directors are E. A. Billingsen, J. R. Cook, Howard Showalter, D. D. Junkins and A. B. McDonald, all of Fairmont, W. Va.

#### NORTH CAROLINA.

Bahama—Saw mill.—H. L. and F. W. Tilly are erecting saw-mill.

Bald Mountain—Supply Company.—Incorporated: Bald Creek Supply Co., with a capital stock of \$5000, by J. M. Buck, Johnson City, Tenn., and D. M. Buck and Charles Buck of Bald Mountain.

Balsam—Paper Mill.—J. B. Lippincott Co., Philadelphia, Pa., reported lately to erect pulp plant for manufacture of paper to be used in its books and periodicals, states that it has no intention whatever of building such a plant.

Burlington—Flour Mill, etc.—S. M. Hornedy, John M. Coble and W. T. Ireland have incorporated the Hico Milling Co. to operate flour and grist mills, etc.; authorized capital is \$27,000.

Burlington—Publishing.—Ogden F. Crowson, W. C. Thurston and J. M. Browning have incorporated the Burlington News Co. with an authorized capital of \$25,000.

Charlotte—Cotton Mill.—Louise Mills has installed 5000 additional spindles; previous equipment 20,000 spindles and 562 looms.

Eatonville—Electric-light Plant.—City has awarded contract for the erection and equipment of its proposed electric-light plant.

Greensboro—Artificial Stone Works.—J. C. Herring of Charlotte, N. C.; Sam Brown and W. E. Carter of Greensboro will establish artificial stone works.

Hickory—Iron-ore Deposits.—The Thornton Light & Power Co. while drilling a well has found fine iron ore at a depth of twenty feet. It is stated that the deposit seems to be a solid bed.

Kings Mountain—Cotton Mill.—Bonnie Cotton Mills, reported last week as to enlarge its plant, has let contract for 3000 additional spindles and twistlers to fill its building.

Kings Mountain—Cotton-oil Mill.—G. F. and J. B. Hambricht, reported last week as contemplating the erection of a cottonseed-oil mill, will organize stock company. Capital stock will be \$10,000 to \$15,000 and capacity of plant five to ten tons.

Lexington—Marble Works.—John H. Mottlinger of Wallburg, N. C., has purchased interest in the Lexington Marble Works, and will incorporate the company with capital of \$2000, with privilege of increasing to \$5000, operating under same name.

Monroe—Buggy Factory.—T. J. Payne of Mt. Airy, N. C., manufacturer of buggies and other vehicles, will remove his plant to Monroe and organize a stock company to continue the enterprise. A building 75x100 feet, three stories high, costing \$25,000, will be erected. W. C. Heath and W. S. Lee will be interested.

Morganton—Water-works.—Morganton Water-Works Co. has been incorporated, with authorized capital of \$100,000, for construction of system of water-works, by H. L. Millner, W. C. Ervin, C. M. McDowell and others.

Pilot Mountain—Tobacco Factory.—A company has been organized to purchase and put in operation the tobacco factory previously operated by Dodson Bros.

Salisbury—Slate Quarry.—J. T. Wyatt is preparing to develop slate quarry, and will erect derricks and make other improvements at once.

Salisbury—Copper and Gold Mining, Water-power Development, Electric Plant, etc.—Yadkin Mines Consolidated Co., capitalized at \$1,000,000; Yadkin Land Co., capitalized at

\$1,000,000; Yadkin River Electric Power Co., capitalized at \$5,000,000, and the Yadkin & Virgilina Copper & Land Co., capitalized at \$750,000, have been incorporated. They are formed for the purpose of developing the operations in connection with the great water-power in the Yadkin river. Yadkin Mines corporation owns the Russell gold mine, now being developed, and other mines to be developed. The land company owns 3000 acres of land, which will be developed as a town to take advantage of the cheap power to be obtained. The Yadkin River corporation will develop 46,000 horse-power on the Yadkin river, where it is said a fall of 180 feet is found in five miles, the first development to be 26,000 horse-power on the Stanly county side. This power will be transmitted by electricity to the new town, Salisbury, Concord and other cities for use by industrial plants. The Yadkin & Virgilina corporation will mine copper and other minerals in Granville, Person and other counties. The incorporators of these companies are the Whitney Company, Geo. I. Whitney, T. L. Stephenson and H. L. W. Hyde of Pittsburg, Pa., and E. B. C. Hambley of Salisbury. For further particulars address the Whitney Company, Salisbury, N. C., or Frick Building, Pittsburg, Pa.

Trion—Box Factory.—A. D. Beatson & Sons will organize the Trion Folding Box & Carton Co. to establish factory for making folding boxes.

Troy—Mercantile.—Chartered: Hurley-Beaman Company, with a capital stock of \$5000, by G. S. Beaman, C. G. Beaman and W. L. Hurley.

Washington—Plumbing, etc.—Chartered: J. H. Harris Plumbing & Supply Co., with an authorized capital of \$25,000, by J. H. Harris, S. C. Bragow, C. F. Blount and J. B. Respass.

Wilmington—Bottling Plants.—George H. Hutaff has secured territorial rights for "Coca-Cola" and will establish bottling plants in Wilmington, Fayetteville and New Berne.

Wilmington—Machine Shops.—Company reported recently to be organized, with capital of \$25,000, for construction of machine shops, by C. W. and B. G. Worth, R. S. Collins and others, has been incorporated as the Cape Fear Machine Works. Authorized capital is \$100,000.

Wilmington—Street Paving.—The Coal, Cement & Supply Co. has received contract for vitrified-brick paving to cost about \$10,000.

Wilson—Knitting Mill.—W. B. Cooke of Louisburg, N. C., and John Walton, Jr., of Philadelphia, Pa., contemplate establishing the \$10,000 knitting mill referred to last week.

Winston—Knitting Mill.—P. K. Green and W. A. Blair will operate the knitting mill reported last week as contracted for.

#### SOUTH CAROLINA.

Anderson—Cotton Mill.—Anderson Phosphate & Oil Co.'s rope mill, reported recently, is now being installed. Yarns will be made. The plant will be operated by electricity and cost about \$40,000.

Camden—Implement Factory.—Reed & Zemp have secured patents on an adjustable hay rake and will organize company to establish factory.

Charleston—Cotton Mill.—Royal Bag & Yarn Manufacturing Co., mentioned last week as reported to double its equipment, is installing additional machinery, and will meet December 3 to act upon a proposition to increase capital by \$150,000 to pay for this and other improvements.

Clifton—Cotton Mill.—Clifton Manufacturing Co. has let contract at about \$110,000 to T. C. Thompson & Bros. of Birmingham for rebuilding mill No. 3, destroyed by flood last June. An equipment of about 35,000 spindles and 1050 looms will be installed, with both electrical and steam power. The machinery will probably cost about \$500,000.

Jonesville—Lumber Company.—Alman Lumber Co. has been incorporated, with capital of \$5000, and J. F. Alman, president-treasurer, and J. J. Littlejohn, secretary.

Liberty—Cotton Mill.—Calumet Manufacturing Co. has been incorporated, with capital stock of \$50,000, to establish the yarn mill lately reported; H. L. Clayton, B. H. Callahan, W. H. Chapman and W. T. Smith, incorporators.

Rowesville—Tie and Lumber Company.—Rowesville Tie & Lumber Co. has been incorporated, with capital of \$3000, by J. E. Boone, O. L. Crum, W. R. Crum and D. W. Cox.

#### TENNESSEE.

Knoxville—Fire-brick Works.—E. E. McCroskey, J. S. Robbins and others will incorporate a company to establish fire-brick works with an output of 20,000 daily; prob-

ably sewer pipe will also be manufactured. Contract for the machinery is reported as signed.

Lenoir City—Knitting Mill.—The Dixie Mills will install 2000 spindles to manufacture yarns to supply its knitting machines; will also install 150-horse-power engine. Contract for machinery has been awarded.

Lewisburg—Packing Plant.—S. T. Hardison, I. B. Whitsell and Scott D. Davis are interested in establishment of packing plant.

Memphis—Towing Company.—Bluff City Towing Co. has been incorporated, with capital stock of \$25,000, by S. B. Anderson, C. J. Tully, John Hogan, A. D. Kemp and W. B. Morgan.

Nashville—Bakery.—Cumberland Baking Co. has been incorporated, with capital of \$5000, by J. E., P. L. and L. B. Shields.

Nashville—Machine Shop.—Union Machine Co. has purchased site for the erection of an additional shop and foundry.

Rossville—Wagon Factory.—National Manufacturing Co., manufacturer of delivery wagons, will enlarge and improve its plant.

Sparta—Coal Mines.—Clifty Creek Coal & Coke Co., recently reported incorporated with capital of \$200,000 for development of 5000 acres of coal lands, has completed organization, electing Jesse Walling of McMinnville, Tenn., president; R. Hill, vice-president; W. B. Young, general manager, and H. R. Walling of McMinnville, secretary-treasurer.

#### TEXAS.

Austin—Market.—S. D. Arnold and Charles Robinson of Austin and H. H. Franks of Houston have incorporated the Model Market Co. with capital stock of \$5000.

Beaumont—Telephone System Improvements.—Southwestern Telephone & Telegraph Co. will expend \$150,000 in constructing new building with underground system of wires, etc.

Brenham—Mining, etc.—Washington-Lee Oil & Mining Co. has been organized to develop oil and mining lands. R. Stricker is president.

Cleburne—Knitting Mill.—W. G. Tice of Weatherford, Texas, contemplates locating a \$14,000 knitting mill at Cleburne.

Comanche—Sewerage System.—Report as to city construction of sewerage system mentioned last week was not correct. The system is not contemplated at present.

Eagle Pass—Drug Company.—Lyman Drug Co. has been incorporated, with capital of \$10,000, by W. F. Lyman and others.

El Paso—Electric-light Plant.—It is reported that El Paso Electric Co. will increase capacity of its electric-light plant.

Fort Worth—Cigar Factory.—D. Gross of Gainesville, Texas, is investigating with view to establishing cigar factory in Fort Worth.

Fort Worth—Lumber Company.—Chartered: Cicero Smith Lumber Co., capital stock \$50,000, by Cicero Smith of Mineral Wells, Texas; J. L. Johnson and G. H. Connell of Fort Worth.

Fort Worth—Brick, Cement and Tile Works.—H. H. Cobb, L. D. Cobb and a Mr. Freeborn of Ithaca, N. Y., will organize a \$250,000 company to establish brick, cement and tiling works. Deposits of raw material have been located and will be developed for manufacturing the product mentioned.

Hampton—Rice Cultivation.—Hiram C. Wheeler of Hampton and capitalists of Fremont, Neb., will incorporate a company, with capital stock of \$300,000, to develop rice lands. They will acquire a 6000-acre tract and build a storage reservoir covering 800 acres to supply water.

Kosse—Kaolin Plant.—Dispatches state that Charles S. Edgar, president of the Edgar Plastic Kaolin Co., Trenton, N. J., and W. F. Proctor of Houston, Texas, are investigating kaolin deposits near Kosse with a view of purchasing same and establishing a large plant.

Marlin—Pressed-brick Plant.—A. L. Bronson contemplates establishing pressed-brick plant.

Merkel—Copper and Zinc Mines.—It is reported that T. M. Clinton of Abilene, Texas, has sold forty acres of land near Merkel to capitalists of Muscogee, I. T., who will open copper and zinc mines.

Mineola—Water-works.—Mineola Light & Ice Co. has been granted franchise for construction of system of water-works, as recently reported. J. P. Kittrell is engineer; cost \$10,000.

New Caney—Insecticide Factory.—Company is being organized for erection of plant at New Caney for manufacture of boll-weevil exterminator, an invention of Dr. E. A. Bourlon; capacity of plant will be 1000 barrels per



day. Among others said to be interested are W. D. Cleveland and T. W. House of Houston, Texas.

Otto—Telephone System.—Perry & Otto Telephone Co., reported incorporated last month, will construct line about nine miles long, connected with fourteen instruments and long-distance lines.\*

San Antonio—Oil Wells.—J. Henry Putnam of Ottine, Texas; Charles Schreiner of Kerrville and T. H. Zanderson of San Antonio are the incorporators of the Putnam Oil Co., reported recently as incorporated with capital of \$10,000.

San Antonio—Electric-power Plant.—City will vote at once on issue of \$200,000 of bonds for erection of municipal electric-lighting and power plant. Address The Mayor.

San Antonio—Mercantile.—Henry Rhein, J. H. Erb and W. J. Springall have incorporated the Erb-Springall Co., to deal in mantels, grates, wallpaper, etc., with capital stock of \$30,000.

San Antonio—Barber Supplies.—T. G. Maffi, Ambrosia Martinez and J. T. Steadman have incorporated the Maffi Barber Supply Co., capital of \$2000.

Saratoga—Saw-mill.—It is reported that John A. McShane, mentioned last week, and associates will build a saw-mill with a daily capacity of from 100,000 to 200,000 feet of lumber and that the plant's cost will be from \$100,000 to \$200,000.

Sherman—Telephone System.—It is reported that the Grayson County Telephone Co. will expend \$34,000 in improvements and betterments.

Texarkana—Mercantile.—Chartered: E. A. Dryer Carpet & Furniture Co., with capital of \$50,000, by E. A. Dryer, W. H. Elliott and C. E. White.

#### VIRGINIA.

Berkley.—W. E. Thomas Corporation has been chartered, with Charles L. Culpepper, president, and capital stock of \$30,000.

Berkley—Paper Mill.—The Cotton Oil & Fiber Co. contemplates enlarging its plant for manufacturing cottonseed products, the new installations to include an equipment for making paper from cottonseed hulls.

Blackstone—Heading Factory.—E. S. Hobbs has sold tract of timber land to Northern parties, who will establish a large plant for manufacturing barrel heading.

Emporia—Timber Company.—Greenville Timber Co. has been incorporated, with G. L. Vincent, president, and an authorized capital of \$50,000.

Front Royal—Copper Mines.—Manassas Gap Copper Mines has been incorporated with capital stock of \$269,000, and Francis H. S. Morrison, president.

Lynchburg—Bakery, etc.—Brooks & Flowers Co. has been incorporated, with capital of not less than \$5000 nor more than \$15,000, for establishment of bakery and confectionery plant. W. A. Brooks is president; P. G. Mamlatas, vice-president; T. C. Flowers, secretary-treasurer.

Lynchburg—Printers and Publishers, etc.—The J. P. Bell Company, reported last week as incorporated with a capital of \$65,000, is not formed to deal in real estate, as was erroneously stated. This company continues the business of the J. P. Bell Company (established in 1859) as publishers, stationers, printers, binders and jobbers of school and college text books. J. P. Bell is president; W. H. Wranek, vice-president, and J. M. Dulaney, secretary-treasurer. These officers, James W. Bell of Abingdon, Va., and R. O. Bell of Richmond, Va., constitute the board of directors.

Martinsville—Tobacco Factory.—Rucker & Whitten Tobacco Co. will increase its capital stock to \$800,000, not to \$80,000 as erroneously given last week.

Norfolk—Barrel Factory.—Farmers' Manufacturing Co., operating a barrel factory, will increase capital stock from \$100,000 to \$250,000.

Norfolk—D. W. Warren Company has been incorporated, with D. W. Warren, president, and capital stock of \$30,000.

Petersburg—Bridge and Channel.—The city has obtained from Chesterfield county the privilege to cut channel 300 feet wide for the purpose of diverting flood water from city harbor, on condition that the city or the United States government will build substantial wooden bridge across the proposed channel. The river improvement is in charge of Major Winslow, United States engineering corps, Norfolk, Va., and the whole work, including building of bridge, will be done by United States government, \$200,000 having been appropriated.

Waverly—Furniture Company.—Waverly Furniture Co. has been incorporated with

capital stock of \$15,000, and J. O. Filchette, general manager.

#### WEST VIRGINIA.

Charleston—Lumber Manufacturing.—Incorporated: McGreger Manufacturing Co. to manufacture lumber; capital \$25,000; incorporators, R. R. McGreger of St. Albans, John Dickinson, E. A. Reid, J. H. Briscoe and W. A. Cracraft.

Chester—Supply Company.—Incorporated: Chester Supply Co., capital \$10,000, by E. A. Hart and J. E. McKenzie of New Cumberland, W. Va.; Samuel Jackson and S. Simpson of Chester, W. Va., and J. A. Covert of Wellsburg, W. Va.

Clarksburg—Pottery.—The A. Radford Pottery Co., recently reported organized with \$50,000 capital, will erect building 120x180 feet and equip with three kilns for manufacturing art and utility pottery. A. Radford is engineer in charge.

Elkins—Wheel Factory.—Archibald Wheel Co., Lawrence, Mass., is considering the establishment of spoke factory at Elkins, as recently reported, but has made no definite arrangements.

Elkins—Power-house.—Charles E. Cassell of Baltimore, Md., is preparing plans for one-story brick power-house for the Davis Memorial Hospital.

Fairmont—Pump Works.—Incorporated: T. G. Aultman Steam Pump Works to manufacture steam pumps of all kinds; capital \$25,000. Incorporators, T. G. Aultman, Sam R. Nuzum and Nannie Aultman of Fairmont, W. Va., and John Fordyce and Charles E. Parish of Worthington, W. Va.

Fairmont—Coal Mines, etc.—Incorporated: Allegheny Coal Co., to mine coal and manufacture coke; capital \$1,000,000; incorporators, G. M. Dodge, T. H. Wheeler, V. Herman of New York, F. S. Landstreet of Davis, W. Va., and W. S. Meredith of Fairmont.

Hundred—Pumping Station.—The pumping station being erected at Hundred by the Carnegie Natural Gas Co. will cost \$150,000; buildings will be of steel, equipped with all improvements, including reservoir, six 300-horsepower boilers with engines to correspond.

Huntington—Realty.—Chartered: Tri-State Realty Co., capital \$25,000, by Blanche A. Adams, Wm. Chaffin, W. B. Chaffin, B. K. Stanley and Wm. Farmer.

Huntington—Gas and Oil Wells.—Hurricane Oil & Development Co. has been incorporated, with capital of \$25,000, by H. C. Shims, F. B. Enslow, J. L. Caldwell and A. A. Handley.

Knoxtville—Coal Mines and Coke Ovens.—Chartered: Sandy Creek Coal & Coke Co. to mine coal, construct coke ovens, etc.; capital \$50,000. Incorporators, C. E. Hutchinson and W. L. Hutchinson of Fairmont, W. Va., and C. A. Short, M. W. Hall and C. L. Watkins of Shinnston, W. Va.

Logan—Coal Mining.—Chartered: Big Creek Development Co., capital \$5000, by William C. Yawkey, New York, N. Y.; W. H. Yawkey, Charles H. Freeman, Detroit, Mich.; John B. Hager, Madison, W. Va.; C. H. Hudson, Logan, W. Va., to develop coal lands.

New Cumberland—Hardware.—Frank W. Stewart, Daniel McDonald, Melvin C. Thayer and others have incorporated the Union Hardware Supply Co., capital stock of \$10,000.

Pennsboro—Gas Wells.—Chartered: Pennsboro & Harrisburg Gas Co., capitalized at \$100,000, to drill for gas. J. K. B. Woodell, M. S. McCullough and G. P. Ogler of Pennsboro, B. H. Hall and J. H. Sumfinger of Harrisville, W. Va., and Frank P. Corbin of Morgantown, W. Va., are the incorporators.

Phillippi—Industrial Development.—Incorporated: Spencer Development Co., to develop all kinds of lands, etc.; capital \$8000; incorporators, S. A. Moore, Charles Zirkle of Phillippi, A. S. Heck and L. Goff of Spencer, W. Va., and J. W. Stuart of Buckhannon, W. Va.

Romney—Extract Company.—Hampshire Extract Co. has been incorporated, with capital of \$30,000, by Wm. B. Stump, Wm. E. Bently of Romney, Robert M. Washington of Green Spring, W. Va., and others.

Welch—Barytes Mining.—Chartered: Wlenman Baryta Co. to mine baryta, iron and other ores, to quarry stone and manufacture; capital \$25,000. Incorporators, J. N. Dugger, W. W. White, Mary W. White, Botts Strother and Thomas Woodward.

Wheeling—Iron Furnaces, etc.—A consolidation of the Whitaker Iron Co. and Wheeling Corrugating Co. of Wheeling, Laughlin Nail Co. of Martins Ferry, Ohio, and Portsmouth Steel Co., Portsmouth, Ohio, is under consideration as rumored last week. However, the consolidation has not been consummated, and announcements relative to same at this time are premature.

Wheeling—Tool Works.—Matt McDermott will erect new building at his tool works and install two new hammers in forge department.

#### INDIAN TERRITORY.

Ada—Asphalt Mines.—Ada Asphalt Co. has been organized by Memphis (Tenn.) parties to develop asphalt deposits.

Tablequah—Water-works.—Crystal Springs Water Co. has received franchise to establish water-works, and will at once begin the construction of system. Materials have already begun to arrive.

#### OKLAHOMA TERRITORY.

Alva—Flour Mill.—J. T. Hiatt will build a mill with daily capacity of 600 barrels of flour.

Comanche—Mining, etc.—W. K. Miller, William Crawford, A. T. Isle, B. E. Waller and others of Cache, O. T., and G. H. Block of Lawton have incorporated the Anaconda Mining & Prospecting Co. with capital stock of \$500,000.

Guthrie—Publishing.—H. A. Neill of Guthrie, Harry T. West and Harry W. Greve have incorporated the Standard Farmer Publishing Co. with capital stock of \$25,000.

Lawton—Mining.—Springdale Mining Co. has been incorporated, with a capital stock of \$1,000,000, by S. D. Leggett, James M. Powers and Frank Robinson of Lawton, W. Baker of Oklahoma City, O. T., and W. A. Goodenough of Louisville, Ill.

Lawton—Mining.—Liberty Mining Co. has been incorporated, with capital stock of \$1,000,000, by J. I. Hollis and W. R. Kenney of Oreeana, L. J. Kalklosch of Lawton and others.

Lawton—Gaslighting Plant.—Frank Master (said to represent the Consolidated Oil & Gas Co., which has developed gas wells) has received franchise for establishment of gas-heating and lighting system.

Lawton—Mining.—Chartered: Craterville Mining Co., with \$4,000,000 capital stock, by Dudley P. Brown, Sank J. Foster and C. H. Rogers.

Lawton—Mining.—Chartered: Rock Island Mining Co., with \$1,000,000 capital stock, by J. M. Kuhen of Fort Worth, Texas; A. E. and C. C. Hammonds, O. Maxey, D. A. Jacobs, J. N. Churchwell, W. M. Turner and A. R. McLennan of Lawton, C. P. Gibson, W. W. Whitman and A. H. McKenan of Chickasha, I. T.

Sayre—Mill and Elevator.—Incorporated: Sayre Mill & Elevator Co., with \$30,000 capital stock, by J. A. Faris of Yukon, O. T.; J. M. Pratt and J. M. Faris of Sayre.

Shawnee—Drug Company.—Incorporated: J. M. Remington Drug Co., with \$25,000 capital stock, by J. M. Remington, E. J. Ware and R. W. Blakey.

Shawnee—Light and Power Company.—Shawnee Light & Power Co. has been incorporated, with capital of \$200,000, by Otto Kappier, John B. Sibley, D. J. McCann and J. Cuthbert Sweeney, all of Denver, Col.

#### BURNED.

Aberdeen, Miss.—Cotton gin and grist mill owned by Jerome Hill Cotton Co. of Memphis, Tenn.

Alpharetta, Ky.—Alpharetta Hotel; loss \$7000.

Atlanta, Texas.—J. J. Casey's cotton gin. Hardistown, Texas.—Mrs. W. T. Gunn's cotton gin.

Brownsville, Tenn.—Hatchie Manufacturing Co.'s spoke factory.

Buena Vista, Tenn.—Watson Cotton Co.'s cotton gin; loss \$4000.

Danville, Va.—John N. Wylie & Co.'s tobacco factory.

Fair Forest, S. C.—James R. Snoddy's cotton gin; loss \$3000.

Fort Cobb, O. T.—Fort Cobb Cotton Gin.

Garber, O. T.—H. M. Brandt's creamery; loss about \$3000.

Greenville, Ga.—Parham & Co.'s cotton gin; loss \$5000.

Lancaster, Tenn.—White Gin Co.'s cotton gin; loss \$5000.

Monroe, Ga.—Baxter & Rodwell's cotton gin; loss \$6000.

Neyn, Tenn.—W. G. McCain & Co.'s lumber mill, valued at \$30,000.

Paulding, Miss.—J. F. Pittman's saw-mill, gin and grist mill.

Rossville, O. T.—Hall's cotton gin; loss \$5000.

Shepardtown, Miss.—Shepardtown Cotton Gin; loss \$5000.

Smith Grove, Ky.—Smith Grove Milling Co.'s flour mill; loss \$10,000.

Stinson, Ga.—E. S. Crowder & Co.'s cotton gin; loss \$8000.

St. Louis, Mo.—Barrett Manufacturing Co.'s tar-paper plant; estimated loss \$12,000.

Swallow, Tenn.—G. C. Simmons' cotton gin; loss reported at \$3000.

Texarkana, Ark.—Arkansas & Texas Grain Co.'s elevator; estimated loss \$6000.

Tunnelton, W. Va.—Saw-mill of Thomas F. Smouse of Cumberland, Md.

Velma, I. T.—O'Neill & Frenshley's cotton gin, valued at \$5000.

Welsner, N. C.—J. O. Gaither's saw-mill.

Whitesburg, Ky.—Public school building, valued at \$5000. Address The Mayor.

Winchester, Tenn.—Anderson & McDowell's flour mill, damaged by boiler explosion.

#### BUILDING NOTES.

\*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

Austin, Texas—Church.—The Methodist church of Austin has ordered plans and specifications for the erection of a new edifice.

Austin, Texas—Engineering Building.—Regents of University of Texas, Geo. W. Brackenridge, chairman, will open bids November 20 for erection of three-story and basement brick building for engineering department. Plans, specifications and other information at office of Coughlin & Ayres, architects, San Antonio; James B. Clark, proctor, Austin; W. S. Carter, Galveston; R. E. L. Sauer, Dallas, and St. Louis Terra-Cotta Co., Lincoln Trust Building, St. Louis.

Birmingham, Ala.—Masonic Temple.—The Masonic Temple Association, M. T. Stradford, vice-president, has decided to build a nine-story structure costing \$30,000 instead of seven-story costing \$75,000, as has been projected.

Blaine, Ky.—Bank Building.—Bank of Blaine, H. H. Gambill, president, will build a modern stone banking structure.

Chattanooga, Tenn.—Bank Building.—Administration Trust Co., E. Y. Chapin, president, will erect new two-story building.

Concord, N. C.—Church.—First Presbyterian Church will build edifice to cost about \$20,000.

Houston, Texas—Business Building.—Mrs. Louisa Weiss has let contract to N. C. Jensen for construction of three-story brick business building to cost about \$10,000.

Huntington, W. Va.—Stable.—H. E. and C. S. Love will erect brick livery stable.

Huntington, W. Va.—Office Building.—Plans have been completed and bids will soon be asked for erection of George M. Merritt's proposed seven-story brick office building.

Kansas City, Mo.—Business Block.—J. H. Ricksecker will erect three-story brick business block at cost of \$20,000.

Kansas City, Mo.—Flats Building.—Mrs. Julia M. McKee will erect three-story brick flats building to cost \$20,000.

Kansas City, Mo.—Dwellings.—Permits have been granted E. M. Baker for erecting of 4000 dwelling; R. S. Latchaw for \$500 building; E. E. Miller for \$5000 brick dwelling, and Mrs. C. Hal Whitehead for brick flats to cost \$8000.

Kansas City, Mo.—Warehouse.—Mrs. Elizabeth F. Tiernan has obtained permit for the erection of warehouse to cost \$5000 at 1522 St. Louis avenue.

Kountze, Texas—Courthouse.—Hardin county will vote on issue of \$50,000 of bonds for erection of new courthouse. Address County Clerk.

Laurel, Miss.—Bank Building.—First National Bank has let contract to C. M. Rubush of Meridian, Miss., at \$13,065 for construction of bank building lately reported. Contract does not include office fixtures or inside ornamentation.

Louisville, Ky.—Stockyard Sheds.—The Bourbon Stockyards Co. will build sheds, 725x416 feet, to replace structures recently burned, to cost \$100,000.

Louisville, Ky.—Hotel.—Herman Probst, 10 West 22d street, New York, has been awarded contract at \$550,000 for erection of the new Seelbach Hotel, previously reported at length in these columns.

Louisville, Ky.—Building.—Vienna Restaurant Co. will improve its building at cost of \$5000.

Louisville, Ky.—Apartment house.—C. Steg has let contract to George Seidler for construction of building to contain eight flats at 8th street and Broadway.

Louisville, Ky.—Flat Building.—Clark & Loomis, architects, have completed plans and specifications for Mrs. T. B. Duncan's proposed \$10,000 flat building lately reported.

McHenry, Miss.—Hotel.—McHenry Improvement Co., capitalized at \$30,000, is organizing to build hotel, etc. Address care of H. B. Bostick.

Newkirk, O. T.—Jail.—Kay county will vote December 1 on issuing \$6000 in bonds for erection of jail. Address County Clerk.

Norfolk, Va.—Lodge Building.—John H. Pierce has been awarded contract for building annex to Elks' home; cost \$15,000.

Oklahoma City, O. T.—Hospital.—Dr. H. H. Wynne will build hospital to cost \$10,000 after plans by Arthur J. Williams.

Oklahoma City, O. T.—Church.—Methodist Episcopal Church has let contract to Gross Construction Co. of La Crosse, Wis., for construction of \$40,000 church.

Perry, Ga.—Courthouse.—Houston county will enlarge and improve its courthouse, plans and specifications for which are being prepared by Alexander Blair & Kern of Macon, Ga. Bids will be called for about December 1.

Raleigh, N. C.—Masonic Temple.—O. A. Robbins & Co. of Charlotte, N. C., have received contract for the architectural work on the proposed Masonic temple at Raleigh.

Russellville, Ala.—Church.—W. A. Dearing, secretary building committee, will award contract November 14 for erection of brick church, plans and specifications of which will be ready after November 9.

Seneca, S. C.—Hotel.—R. M. Richardson will build hotel, three stories high, with two stories on ground floor, at a cost of \$20,000.

St. Louis, Mo.—Hotel.—It is reported that the Home Brewing Co. will build a hotel to cost \$60,000.

St. Louis, Mo.—Dwelling.—J. B. Hellmuth, 5564 Barmter street, has permit to build residence to cost \$3000.

Waco, Texas.—Library Building.—Contract has been awarded to F. M. Garthwait of Chicago, Ill., at about \$30,000 for the proposed Carnegie Library.

Washington, D. C.—College.—Trinity College has received plans and specifications by E. F. Durang, 1200 Chestnut street, Philadelphia, Pa., for the erection of a four-story addition.

Washington, D. C.—Union Station.—Recent reports from Philadelphia (one of which was mentioned last week) stating that the work of building the new Union Station has been placed under contract are incorrect. Before any contracts can be awarded the architects' plans for the depot must be submitted to the commissioners of the District, and a full set of drawings will probably be shown this week in the office of H. C. Newcomer, acting engineer commissioner. G. H. Burnham & Co. of Chicago, Ill., are the architects.

Whitesburg, Ky.—Church.—Presbyterian congregation will award contract for rebuilding church recently burned at loss of \$6000.

## RAILROAD CONSTRUCTION.

### Railways.

Ada, I. T.—The Missouri, Kansas & Texas Railway has run its first train into Ada over the new line from Atoka, I. T., via Coalgate.

Atlanta, Ga.—Grading is being pushed on the Marietta Electric Railway.

Birmingham, Ala.—The Louisville & Nashville Railroad is reported to have completed twenty-two miles of the Cauc Creek extension into the Walker county coal fields. The entire line will be thirty-five miles long.

Brookhaven, Miss.—Mr. T. C. Hannan informs the Manufacturers' Record that officials of the Illinois Central Railroad give assurance, as a result of a recent visit to Chicago by a committee, that the branch road from Brookhaven to Monticello, which was abandoned some time ago, will be built, but they do not say when work will be resumed.

Broxton, Ga.—Track is now being laid on the Wadley & Mount Vernon Railroad extension from Broxton to Barrows Bluff on the Okmulgee river.

Chattanooga, Tenn.—An officer of the Southern Railway is reported as saying that it will build double track on the main line immediately from Citico to Ooltewah, fifteen miles.

Chattanooga, Tenn.—Reported that a branch line is being built from Wetmore, on the Atlanta, Knoxville & Northern Railroad, to Cleveland, Tenn. The line is said to be constructed in the interest of the Tennessee Copper Co.'s railroad near Ducktown.

City of Mexico, Mexico.—The National Railroad of Mexico has completed the standard-gauging of its line from the City of Mex-

ico to Laredo, Texas. The work was started over two years ago.

City of Mexico, Mexico.—Reported that the National Railroad of Mexico has cleared the Mercader tunnel on its broad-gauge extension after the cave-in, and that the tracklaying will therefore be completed immediately.

Cleburne, Texas.—The Dallas, Cleburne & Southwestern Railway Co. has, it is announced, decided to postpone construction of an extension. Directors have been elected as follows: B. P. McDonald, Fort Scott, president; C. C. Nelson, Fort Scott, vice-president; W. D. Myers, general manager; W. A. McDonald, secretary and treasurer; W. M. Odell, C. H. Osborn, Fort Scott; J. E. Fesler, Sherman.

Cumberland, Md.—The Lonaconing & Westernport Electric Railway has, it is reported, received a deed for the right of way granted by Col. Thomas B. Davis from the Potomac river to Keyser, W. Va., for the extension from Westernport to Keyser.

Dahlgone, Ga.—The Gainesville & Dahlgone Electric Railroad Co. has been granted two more years to complete the first fifteen miles of its line. Grading is now done for twenty miles and the line is wholly finished for eight miles. W. H. Chartres of Dahlgone is attorney.

Enid, O. T.—The Arkansas Valley & Western Railway is reported to have laid track as far as Woolsey, and will, it is stated, reach Enid by November 10.

Hayneville, Ala.—Reported that J. W. Pruitt, who has the grading contract on the Hayneville Railroad, will have his work completed by February.

Jellico, Tenn.—Track has been laid on the Knoxville, LaFollette & Jellico Railroad from Jellico to the Narrows.

Kansas City, Mo.—President George F. Wolfe, Stockton Southeastern Railroad Co., 308 Temple Block, writes the Manufacturers' Record that the survey is from Eldorado Springs, Mo., to Stockton, Mo., nineteen miles. It is proposed later to extend to Springfield, and thence into the zinc and lead district of Arkansas, 145 miles. Will probably be ready to let contract for the nineteen miles by January 1, and possibly by December 1.

Kansas City, Mo.—Chief Engineer Milnor P. Paret of the Kansas City, Mexico & Orient Railway writes the Manufacturers' Record confirming the report that work has begun on the Outer Belt Line. He says: "We have just placed a contract with O'Hearne Bros., contractors, of this city, for the grading, clearing, grubbing, etc., on a couple of miles of the Outer Belt road." Next spring the work may be opened up with a strong force. A large summit cut is to be taken out, and this material may then be hauled a mile or more each way by train. A report from Chihuahua, Mexico, quotes W. T. Millington, local manager on the west coast for the "Orient," as saying: "We have rails laid up to the 73d kilometer from Topolobampo, and are pushing the work on to El Fuerte on the 28th kilometer. We have rails to lay 130 kilometers of track from Topolobampo, and have the grading for 118 kilometers, or ten kilometers east of El Fuerte. We have about 600 men at work."

Knoxville, Tenn.—Major H. C. Anderson is reported to have secured a contract to build a branch railroad a mile long in Blount county from the Atlanta, Knoxville & Northern Railway to the Tennessee Varigated Marble Co.'s quarries.

Lake Charles, La.—George Frasch of Cleveland, Ohio; Albert Sackey of New York and others, who propose to build a railroad from Lake Charles via Natchitoches to connect with Northern points, are now, it is stated, considering a plan to merge their interests with the Gulf, Calcasieu & Northern.

Lake Providence, La.—The Lake Providence & Goudsboro Railway Co., Limited, capital \$100,000, has been chartered to build a street-car line from Lake Providence to Goudsboro, a suburb. The directors are Joseph L. Fischer (president), William E. Dunn (vice-president), E. J. Hamley (secretary and treasurer), G. M. Purdy and W. C. Borcharding.

Lawton, Okla.—A Kansas City company that is interested in the Wichita mountains is reported to have made a proposal to the Commercial Club to build a railroad through the mountains to Hobart.

Laurel, Del.—Reported that a combination has been formed to build railways and operate steamers and other vessels for carrying fruit and truck in Maryland, Virginia and North Carolina, as well as in Delaware. The interested parties, it is reported, are the Dallas Marvel Co. and Lewton Ward & Co. of Laurel, Wicomico Lumber Co. of North Carolina, Schofield, Barnes & Co. of Poo-

moke, Md.; Robinson & Co. of Sharptown, Md.; Crane, Hinson & Vaillant, Chestertown, Md. Harvey Marvel is president; Albert Robinson, general manager, and W. E. Vaillant, secretary and treasurer. Laurel will be headquarters.

Live Oak, Fla.—Mr. Frank Drew, president and general manager of the Suwannee & San Pedro Railroad Co., informs the Manufacturers' Record that an extension is proposed, but the location is not definitely decided.

Memphis, Tenn.—The Southern Railway has begun work upon the construction of its large new switching yards between Buntyn and the race track.

Memphis, Tenn.—Seely Dunn, general manager of the proposed Memphis & Gulf Railroad, is reported as saying that about forty-five or fifty men in three parties will be put into the field within two weeks to survey the line between Grenada, Miss., and Pensacola, Fla. It is further reported that Capt. H. P. Farrar will have charge of the survey. The Gulf States Construction Co., of which John A. Lewis of Meridian, Miss., is president, is to build the line.

Morgantown, W. Va.—Between Fairmont and the State line 1000 men are reported at work on the Wabash extension. Mason, King & Hogue have the contract for four miles and for a big tunnel. It is also reported that the Morgantown & Kingwood road has decided to extend to connect with the Wabash. It is also said that the Cheat River Railroad will be extended down the Cheat river to Muddy creek to meet the extension of the Morgantown & Kingwood line now being constructed from Masontown.

Nacogdoches, Texas.—The contract has been let and work begun to clear the right of way for the Nacogdoches & Northeastern Railway from Nacogdoches to Oil City. This is the line for the Hayward syndicate mill.

New Iberia, La.—The New Iberia & Northern Railway Co. has been organized here, with \$500,000 capital, to build a railroad from the Bayou Teche at or near New Iberia, northwest to Natchitoches, to connect with a trunk line, probably the Kansas City Southern.

Newkirk, O. T.—The new line of the Santa Fe system from Newkirk to Tecumseh, 130 miles, will, it is announced, be opened November 29.

Palestine, Texas.—An official informs the Manufacturers' Record that the International & Great Northern Railroad expects to extend the Houston, Oak Lawn & Magnolia Park Railway in Harris county one and seven-tenths miles and to complete the same some time in December.

Philadelphia, Pa.—The issue and sale of \$10,000,000 of 4 per cent. 20-year first-mortgage bonds by the Philadelphia, Baltimore & Washington Railroad Co. (Pennsylvania system) means, according to a director, extensive improvements along the line. W. H. Brown is chief engineer.

Saltillo, Mexico.—An officer of the Coahuila & Zacatecas Railway, which is finishing a branch twenty miles long to the mining district of San Pedro O'Campo, also proposes an extension of the branch to the Bonanza mining district, six miles, all in the State of Zacatecas.

San Angelo, Texas.—The committee on subscriptions for the Kansas City, Mexico & Orient Railway bonus reports that the total of \$50,000 has been oversubscribed. The bonus is payable if the road is completed to San Angelo by May, 1905.

San Angelo, Texas.—W. D. Currier of San Angelo is reported interested in a plan to build a line from San Angelo to Miles, Texas, twenty miles.

Savannah, Ga.—President J. M. Egan of the Central of Georgia Railway is quoted as saying that the Florida extension of the Chattahoochee & Gulf road in the Southern part of Alabama will probably be completed for service about November 15.

Sedalia, Mo.—Col. A. L. Strang is reported to have closed a deal for building the proposed Missouri & Iowa Southern Railway, to be fifty-five miles long, from Sedalia via Marshall to Miami. It is also proposed to extend south from Sedalia to Springfield and from Miami north to the Iowa boundary.

St. Louis, Mo.—President G. W. Huiter of the Arkansas Southern Railroad writes the Manufacturers' Record that the company has recently completed a preliminary survey to Alexandria, La., fifty miles; has made final location for about one-third of the distance and is purchasing rights of way. Construction will be commenced on this extension so soon as engineer's estimates can be prepared and bids taken for contracts.

St. Louis, Mo.—Grading will, it is reported, be completed by January on the Rock Island's line from St. Louis to Kansas City,

which is now in operation from St. Louis to Eldon. It is expected that the entire line will be in operation by March.

Tlaxcotlan, Vera Cruz, Mexico.—Jose L. Perez & Sons are reported to be interested in a plan to build a railroad.

Tremont, La.—The Tremont & Gulf Railroad Co. informs the Manufacturers' Record that it proposes to build an eight-mile extension of the main line and a branch six miles long. This work will not be undertaken until some time next year. W. G. Collier is vice-president and general manager.

Union, S. C.—The Union & Glean Springs Railroad is changing its line from steam to electricity, and it is expected that the work will be completed within three months. Geo. M. Wright is general manager.

Union Springs, Ala.—President W. M. Blount of the Union Springs & Northern Railway in a letter to the Manufacturers' Record confirms the report that the company proposes to build an extension next year from Fort Davis to Rockford, Ala., sixty-three miles.

Wichita Falls, Texas.—The Wichita Falls & Oklahoma Railway, capital \$300,000, has filed its charter and will build about thirty miles of line from Wichita Falls to Red river in Clay county. The incorporators are Morgan Jones, N. Harding, D. T. Bomar, W. E. Kaufman, A. M. Young, J. G. Wilkinson, E. W. Taylor, Ben. W. Foutz, H. C. Edrington and Frank Kell. Messrs. Jones and Kaufman are, respectively, president and treasurer of the Wichita Valley Railway. The new line will, it is stated, ultimately reach Oklahoma City. Col. Morgan Jones is reported as saying that twenty miles of the new line is already under construction.

Yale, Ky.—Mr. E. R. Miller, general manager of the Licking River Railroad Co., which has recently extended its road three miles to Devil's Creek, writes the Manufacturers' Record that the company is negotiating with a further extension to the Elk Fork in order to tap canal coal fields in Morgan county. An early extension to West Liberty is contemplated if present plans mature.

### Street Railways.

Beaumont, Texas.—O. M. Stone of Beaumont will, it is reported, either purchase the horse-car line at Lake Charles, La., and convert it into electricity or apply for a franchise to build an electric railway.

Biloxi, Miss.—W. A. White has been granted a twelve months' extension of his franchise to build an electric railway from Biloxi to Pass Christian.

Houston, Texas.—J. G. Rossman, president of the B. R. Electric Co. of Atlanta, Ga., is reported to have been selected as an expert to plan the extension and improvement for the Houston Electric Light & Railway Co.

Little Rock, Ark.—President W. H. Hemingway and other officers of the street railway have agreed upon the proposed line through the town of Baring Cross, one and one-quarter miles.

Mobile, Ala.—The general council has decided to sell an electric railway franchise on Conception street, and bids are now being received.

Raleigh, N. C.—The Raleigh Street Railway Co. will, it is reported, build an extension.

Shawnee, O. T.—Col. F. B. Burbridge and J. J. Henry of Denver, Col., with J. J. Muzer, George Littlefield and Frederick Frye of Colorado Springs, are reported interested in a plan to build an electric railway in Shawnee.

St. Louis, Mo.—H. S. Doyle is manager of the Western Electrical Supply Co., which, with others, is interested in a plan to build an underground electric railway.

Washington, D. C.—Plans are reported complete for grading seven miles of the proposed Great Falls & Old Dominion Electric Railway from Great Falls to Washington, and the contract is expected to be awarded soon. Robert D. Weaver is president.

Wheeling, W. Va.—The Wheeling & Elm Grove Railroad Co. has applied for a franchise in Elm Grove.

That well-known manufacturer of successful concrete machinery, the Ransome Concrete Machinery Co., is issuing an illustrated folder of instructions for operating the Ransome Drum Mixers. This little publication presents concise rules for operating the equipment to the best advantage. It is valuable not only to those at present operating such machines, but also to prospective buyers of concrete machinery. The description indicates clearly how efficiently the Drum Mixer discharges its functions, and thus recommends the machine to prospective purchasers in this branch of equipment. Company's offices at 11 Broadway, New York.



## Machinery, Proposals and Supplies Wanted.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Air Compressor.—See "Ice Plant."

Backband Manufacturers.—T. C. Kimbrough, West Point, Miss., wants to correspond with manufacturers of backbands.

Bed-spring Machinery.—See "Wireworking Machinery."

Boiler.—See "Engine."

Boiler.—Anthracite Machinery & Supply Co., Allentown, Pa., wants one 200-horse-power water-tube or upright boiler, also wooden tanks 1200 to 1400 gallons capacity, second-hand.

Bottling Machinery.—A. A. McKeithan, Aberdeen, N.C., wants description and prices of machinery for bottling soft drinks.

Brick Machinery.—Louisville Pressed Brick Co., Louisville, Miss., will at once buy complete equipment for pressed-brick works.

Cannery Equipment.—Geo. H. Battle, Niles, Ohio, wants full information regarding cannery, prices on equipment, etc.

Cement.—See "Water-works Improvement."

Cement-plaster Machinery.—Wm. K. Cornish, 333 Hood Building, Birmingham, Ala., wants to correspond with manufacturers of or dealers in machinery for making cement plaster.

Disintegrating Machines.—See "Shredding Machinery."

Dry-kiln.—See "Woodworking Machinery."

Electric Plant.—City of Richmond, Va., will open bids November 16 for annex building and small house of granite, hydraulic, steam and electric machinery of 200 horse-power and two electric-motor pumps, each of 1000 gallons per minute. Plans, specifications, etc., may be obtained at office of superintendent of water-works, Charles E. Bolling.

Electric Wiring.—Alabama Girls' Industrial School will let contract November 24 for wiring and construction work in connection with electric-light plant. Dr. F. M. Peterson, Monteale, Ala., can be addressed.

Electrical Machinery.—Crescent Bed Co., New Orleans, La., wants four electric motors, alternating current.

Elevators.—Crescent Bed Co., New Orleans, La., wants two freight elevators.

Engine.—Bache-Denman Coal Co., Fort Smith, Ark., wants 60-horse-power locomotive open-bottom fire-front boiler f. o. b. cars Montreal, Ark.; also 19x12-inch double-cylinder 4x4-foot drum reversible friction engine.

Engine and Boiler.—See "Mining Machinery."

Engine and Boiler.—See "Saw-mill."

Engine and Boiler.—M. M. Hamilton, Shawnee, Tenn., wants 10 to 15-horse-power boiler and engine, second-hand.

Engine and Boiler.—See "Saw-mill."

Flooring Machine.—See "Woodworking Machinery."

Fountain.—Johnson City, Tenn., is figuring on erecting fountain in city square and desires prices, etc. Address E. E. Ellsworth, chairman Board of Trade.

Heating Apparatus.—Pollock & Bernheimer, Mobile, Ala., want information regarding heating apparatus for six-story building.

Heating Equipment.—Trion Hosiery Co., Lynn, N. C., wants addresses of manufacturers of boilers for heating houses with hot water or steam.

Ice Plant.—Moultrie Ice & Cold Storage Co., Moultrie, Ga., will be in the market for 10-ton ice machine, air compressor, etc.

Iron Hoops and Axles.—F. Braasch, Caracas, Venezuela, wants prices from American manufacturers (of New York preferred) on forty to fifty iron hoops, two inches wide by three-quarters of an inch thick, diameter of 155 centimeters and some of 145 centimeters, made of superior iron; also fifteen to twenty axletrees or axles, length to be one meter between socket and socket, and the arm of the axletree on which the nave turns to be nine and one-half inches; said axles to

be strong enough to support about 15,000 kilograms of weight, made of superior iron.

Mining Machinery.—Brown Hill Mining Co., M. Viroche, manager, Indian Trail, N. C., will soon want engine, boiler, pump, etc., for mine.

Pipe.—See "Water-works Improvement."

Pipe.—H. T. B. Harris, paymaster-general, U. S. N., bureau of supplies and accounts, Navy Department, Washington, D. C., will receive proposals until November 17 to furnish at naval station, Key West, Fla., 21,000 pounds cast-iron pipe, six-inch to twelve-inch, with fittings; a quantity of valves and valve boxes, excavating holes and placing anchors therein. Blank proposals will be furnished on application to naval station, Key West, Fla.

Piping.—See "Water-works Improvement."

Plaster Machinery.—See "Cement-plaster Machinery."

Pumping Machinery.—Proposals will be opened November 24 by water-works department of city of Jackson, Tenn., for furnishing complete on foundation prepared by the city one horizontal high-duty crank and fly-wheel pumping engine with all auxiliaries, fittings, pipings, special tools, gauges, etc.; capacity to be 6,000,000 gallons in twenty-four hours, etc. Specifications and other information can be obtained from Sam C. Lancaster, city engineer.

Railway Equipment.—R. P. Camden, Angelus Hotel, El Paso, Texas, wants 1000 tons of 35 or 40-pound relaying rails to lease or rent with privilege of buying.

Railway Equipment.—Bowen & Street Equipment Co., 391 Atlantic Building, Norfolk, Va., is in the market for 1000 tons or more of relaying 35-pound steel rail.

Saw-mill.—W. B. Johnson, Fayetteville, N. C., wants a cordwood saw, boiler and engine, gasoline preferred, mounted in wagon or on trucks.

Saw-mill.—W. A. Shore Lumber Co., Winston-Salem, N. C., is in market for second-hand "Frick" (or other make) saw-mill with top saw, 20 or 25-horse-power portable boiler and engine on skids, also a No. 1 or No. 2 "Tower" gang edger.

Sewing Machines.—Burroughs & Taylor Co., Sparta, Tenn., will be in market for sewing machines for pants factory.

Shingle Mill.—See "Woodworking Machinery."

Shredding Machinery.—Chas. R. Rife Company, 200 Railway Exchange Building, St. Louis, Mo., wants information as to names and addresses of manufacturers of machinery or process of disintegrating the fiber of a crooked and hard wood; wants machine to take wood in any shape and reduce it by mechanical means to a condition approximate to a very fine excelsior or moss.

Steel Tank.—See "Water-works Improvement."

Tanks.—See "Boiler."

Telephone Equipment.—Perry & Otto Telephone Co., care of S. S. Munger, Perry, Texas, wants prices on telephone instruments, 12 and 14-gauge galvanized wire, etc.

Water-works Improvement.—W. M. Pipkin, president improvement board, Mena, Ark., will open bids November 10 for furnishing all material, machinery, etc., constructing, excavating, building engine-house, steel tank and laying pipe, making all attachments thereto, raising steam and putting water-works system in good first-class working order by March 1, 1904. Plans, specifications and other particulars can be had upon application to W. M. Pipkin. Usual rights reserved.

Water-works Improvement.—Memphis Artesian Water Department, Lawrence Simpson, general superintendent, Memphis, Tenn., will open bids November 2 for furnishing 187 tons 16-inch cast-iron pipe, 138 tons 12-inch cast-iron pipe, 165 tons six-inch cast-iron pipe, eight tons special castings, fifteen tons pig-lead and 650 barrels of American Portland cement, to be delivered f. o. b. cars Memphis, Tenn. Proposals must comply with specifications on file in office of water department, which will be furnished on application. Usual rights reserved.

Water-works Equipment.—Mineola Light & Ice Co., Mineola, Texas, is in market for water-main pipe and fittings, pig lead, plumbing supplies, water meters, three six-inch gate valves, etc., for water-works system.

Wireworking Machinery.—Crescent Bed Co., New Orleans, La., wants prices on bed-spring machinery.

Wood (Cord) Mill.—See "Saw-mill."

Woodworking Machinery.—See "Saw-mill."

Woodworking Machinery.—Gainesville Planning & Coffin Co. will soon want machinery for manufacturing coffins.

Woodworking Machinery.—W. C. Plicher,

Dothan, Ala., wants to buy second-hand dry-kiln and flooring machine.

Woodworking Machinery.—M. M. Hamilton, Shawnee, Tenn., wants new or second-hand shingle mill.

Woodworking Machinery.—T. W. Dowda, Jockey, Ga., wants machinery for making axe, pick and mattock handles.

[Continued from Page 309.]

services, and they claim that prices, promptness of delivery and quality are best served by this method.

### Plants for Crushing Rock.

In road building and various other kinds of construction work mechanical equipments for preparing the crushed rock or stone are required. Machinery for this service has for years been one of the products of American manufacturers, several of which have made a specialty of road-building machinery and contractors' supplies. One of the leaders is the Acme Road Machinery Co. of Frankfort, N. Y. This company is constantly obtaining important contracts, two of the most recent ones being worthy of mention. One of these is contract for erection of the rock-crushing plant at the United States powder depot, Dover, N. J., and the other is for furnishing a stone crusher for the Portsmouth navy-yard, Portsmouth, N. H. Proposals for the latter were opened in Washington on October 13, and this makes the second crusher sold to the Portsmouth yards by the Acme Company.

### Receiving Important Iron Contracts.

Continued activity in the building trade demands a large supply of iron work for apartment-houses, hotels, residences, hospitals and other structures. The manufacture of this class of iron work comprises an important industry, and the various plants engaged in it have been busy for several years past, although there has been recently some cessation in this activity because of labor difficulties, with which the public is familiar. The Chesapeake Iron Works has enjoyed a large share of the trade for building iron work. The company reports that business continues very satisfactory, and that the outlook for additional contracts is very encouraging, as it is now estimating on some important calls for figures. This company is now furnishing the iron work for the two new buildings of the Garfield Memorial Hospital, Washington, D. C., and for one of the largest of the many new apartment-houses being erected in the same city. The Chesapeake Iron Works has an extensive plant at 336 to 342 North street, Baltimore, Md.

### To Develop Hardwood Timber.

A problem of some importance at the present day that confronts lumber manufacturers is to find new locations for their mills when their present timber supply is exhausted. While there has been a great development of timber lands in the South during recent years, yet many extensive and valuable tracts remain available for cutting. In Jackson county, Mississippi, along both sides of the Pascagoula river, are hardwood forests, and the control of about 21,000 acres in that territory has been secured by capitalists. The Gulf Manufacturing, Trade & Transportation Co. has been incorporated and organized to purchase, cut and market the hardwood on these 21,000 acres. This company has its offices at Scranton, Miss., and Room 312 Board of Trade, New Orleans, La. It expects to find a ready market for gum, cypress, hickory, white oak, ash and other lumber. Its shipping facilities by both rail and water for foreign and domestic trade are all that can be desired. The company has an authorized capital of \$300,000. N. F. Miller is president; R. S. Pickett, vice-president, and John J. Machea, secretary-treasurer.

### The Best Made Better.

The new and enlarged edition of Webster's International Dictionary brings Webster again abreast of the growth of the language and confirms it in its position as a standard authority. A decade has passed since the International was first published, and the years have been full of changes and growth in life, knowledge and achievement; changes that have been reflected in the language and that must now be registered in the dictionary. To meet this growth the publishers have again brought the International fully up to date by adding 25,000 new words that have come into literary use, the old words that have changed their meaning, the obsolete words that have been revived. This supplement has been prepared under the direct supervision of Dr. W. T. Harris, United States commissioner of education, who has been assisted by a large corps of eminent specialists. The typographical excellence has

been preserved by the making of an entirely new set of plates for the whole book. The new edition of Webster, therefore, retains all the excellencies of the International, emphasized and multiplied, all its accuracy and convenience, with added fullness and authority.

### Three Caster Manufacturers Consolidate.

Manufacturers who use casters and those who deal in such articles will be interested in an announcement now being made regarding three of the best-known caster manufacturers in the United States. These caster manufacturers now become one, their entire business and plants passing to the Universal Casting & Foundry Co., which has been organized for this purpose. This action will result in an improved service for buyers because of the economies effected, one of the important improvements being the installation of a new factory at Newark, N. J. The Standard Caster & Wheel Co. of New York, John Toler, Sons & Co. of Newark and A. B. Diss Co. of Brooklyn are the three that consolidated. These are well-known enterprises which have gained merited success in their chosen field, and the new company can make every kind, grade, size and character of ball-bearing, stem, Philadelphia and metallic bedstead caster, and every form, style, size and kind of common and bell-shaped rip-necked caster with the expense of manufacture cut to the lowest possible margin. Temporary offices have been located at 318-320 E. Twenty-third street, New York, where all correspondence should be addressed. Later the company expects to move to a more central location, probably on Broadway.

### Hollow Concrete Building Blocks.

Some builders do not realize the great strides hollow concrete building block construction is making throughout the world. A Western publication devoted to architecture and building, referring to the subject, says: "The Harmon S. Palmer Hollow Concrete Building Block Co., Washington, D. C., has over seventy companies doing business with its machines in foreign countries and in the United States. Some of the finest houses and walls have been erected of these blocks. The increasing demand for hollow concrete buildings has advanced step by step in using this material in building until from the first crude and cumbersome way of molding between planks and then building with solid blocks we can now secure in one simple operation the combined effect of durability and beauty, economy, sanitary and many other desirable features which are indispensable to perfect dwellings. These features cannot be overlooked when attention is called to the walls of hollow blocks, the vertical flues of which produce the best ventilation, and non-conductors of heat and cold, retarding the rain and moisture which make walls damp and musty in the outer shell, which is shortly dried as the sun appears, aided by the vertical flues, in connection with the germ-proof qualities of the cement, producing the most sanitary dwelling that has yet been devised. At the present high ruling prices on lumber, stone and brick, and with prospects of still higher prices on these materials, the advantages of the hollow concrete building block as an economic building material is plainly to be seen and is being appreciated by the consumer, since the cost of erection is much less than stone, brick and even wood construction where wood is scarce and subject to long hauls. These concrete buildings are more fireproof than wooden construction, and the insurance rate is therefore reduced, while the hollow walls make the building warmer in winter, reducing the cost of fuel consumption in heating as compared with the ordinary wooden or solid wall in brick or stone buildings. The concrete building block is no longer an experiment, but an established fact as a reliable building material of unquestioned merit." The Harmon S. Palmer Concrete Building Block Co. announces a new adjustable machine. This company claims to be the original inventor of the concrete block machines and method of constructing walls with the blocks. It has just instituted several suits against alleged infringers. It is stated that over eighty companies have been organized in the last ten months, using over 400 Palmer machines under license.

### TRADE LITERATURE.

#### Cotton Chats.

Cotton Chats No. 20 is now being distributed by the Draper Company of Hopedale, Mass. This latest number of the publication discourses regarding the inroads made by the Northrop loom in common loom weaving. Executive officers of cotton mills desirous of

[Continued on Page 318.]

## SEVENTH ANNUAL REPORT

OF THE

## St. Louis &amp; San Francisco Railroad Company.

The following report of the combined operations of the lines constituting the St. Louis & San Francisco Railroad System (excepting the Chicago & Eastern Illinois Railroad) for the fiscal year ended June 30, 1903, is respectfully submitted:

## MILEAGE OPERATED.

	Main track.	Second track.	Side tracks and switches.
By St. Louis & San Francisco Railroad Co.:			
St. Louis & San Francisco R. R. Main Line and Branches.....	2,294.45	5.26	383.09
Kansas City, Ft. Scott & Memphis Ry. Main Line and Branches.....	854.70	23.90	325.94
St. Louis, San Francisco & New Orleans R. R.....	165.93		16.00
Total.....	3,315.08	29.16	725.03
By Other Companies in System Under Their Own Organizations:			
Kansas City, Memphis & Birmingham R. R. Main Line and Branches.....	285.63		84.22
Blackwell, End & Southern Railway.....	195.88		24.53
St. Louis & Rio Grande Railway.....	87.34		15.59
Red River, Texas & Southern Railway.....	16.94		11.91
Paris & Great Northern Railway.....	15.84		17.27
St. Louis, San Francisco & Texas Railway.....	12.75		1.86
Blackwell, End & Texas Railway.....	8.68		1.60
Oklahoma City & Texas Railroad.....			15.81
Birmingham Belt Railroad.....			
Total at June 30, 1903.....	3,938.17	29.16	907.87
Total at June 30, 1902.....	3,414.24	25.66	787.00
Increase.....	523.93	3.50	120.87

The main track mileage added during the fiscal year was as follows:

	Miles.
St. Louis & San Francisco Railroad:	
Blackwell, End & Southern Railway—Choctaw & Northern Railway Crossing, O. T., to South Bank of Red River, completed February 8, 1903.....	154.35
Oklahoma City & Western Railroad—Chickasha, I. T., to South Bank of Red River, completed March 29, 1903.....	135.25
Less mileage on Carbon Branch, Kansas, taken up.....	2.75
Total.....	286.85

St. Louis, San Francisco & New Orleans Railroad:	
Ashdown, Ark., to Madill, I. T., completed April 19, 1903.....	165.93
St. Louis & Rio Grande Railway:	
Brownwood to Brady, Texas, completed March 29, 1903.....	49.72
Blackwell, End & Texas Railway:	
South Bank of Red River to Vernon, Texas, completed February 8, 1903.....	12.75
Oklahoma City & Texas Railroad:	
South Bank of Red River to Quanah, Texas, completed March 29, 1903.....	8.68
Total.....	5.33

The main track mileage owned at June 30, 1903, by Companies composing the System was 3810.14 miles, and the mileage operated under agreements with other Companies was 128.03 miles.

The Company also owns one-half interest in the Kansas Southwestern Railway, 59.35 miles, and in the Taylor City Belt Railway, 1.50 miles, but both of these properties are operated independently and not therefore included in above.

The average main track mileage operated during the year ended June 30, 1903, and for which the financial and statistical statements are submitted, was 3675.23 miles, as against 3252.35 miles during the preceding year, being an increase of 422.88 miles, or 13 per cent.

For details of mileage owned and operated see table X, pages 72, 73 and 74 of pamphlet report.

## STATEMENT OF GENERAL INCOME ACCOUNT OF THE ST. LOUIS &amp; SAN FRANCISCO RAILROAD SYSTEM, INCLUDING THE CHICAGO &amp; EASTERN ILLINOIS RAILROAD CO., FOR THE FISCAL YEAR ENDED JUNE 30, 1903.

	St. L. & S. F. R. R. Co.	Chic. & E. I. R. R. Co.	Total.
Average Mileage.....	3,675.23	743.39	4,418.62
Percentage of Operating.....	65.36	55.83	63.06
Gross Earnings from Operation.....	\$24,289,510 43	\$7,723,847 90	\$32,013,358 33
Operating Expenses.....	15,875,976 78	4,312,587 81	20,188,564 59
Net Earnings from Operation.....	\$8,413,533 65	\$3,411,260 09	\$11,824,793 74
Add—			
Miscellaneous Income.....	131,095 36	372,798 81	503,894 17
Dividends on C. & E. I. R. R. Co. Stock.....	607,132 50		607,132 50
Land Department Receipts.....	5,975 55		5,975 55
Total Net Income.....	\$9,156,837 06	\$3,784,058 90	\$12,940,895 96
Less—			
Interest on Funded Debt and Equipment Notes.....	\$3,530,437 04	\$1,282,323 95	\$4,812,760 99
Rental of Leased Lines.....	2,780,865 49	157,523 22	2,938,388 71
Taxes.....	382,820 89	239,501 00	622,321 89
Rental of Tracks and Terminals.....	98,773 99		98,773 99
Guaranteed Dividends Nos. 1, 2 and 3 on Preferred and Nos. 1 and 2 on Common Stock			
Trust Certificates, C. & E. I. R. R. Co.....	889,222 50		889,222 50
Total Interest and other charges.....	\$7,682,119 91	\$1,679,348 17	\$9,361,468 08
Surplus—applicable to Dividends.....	\$1,474,717 15	\$2,104,710 73	\$3,579,427 88
Out of which the following Dividends were paid:			
4 per cent. each on St. L. & S. F. R. R. Co. First and Second Preferred Stock, \$199,742.12 and \$640,000, respectively.....	\$839,742 12		\$839,742 12
6 per cent. each on C. & E. I. R. R. Co. Preferred and Common Stock, \$463,842 and \$433,068, respectively.....		\$842,910 00	\$842,910 00
Total Dividends.....	\$839,742 12	\$842,910 00	\$1,682,652 12
Leaving Balance of.....	\$634,975 03	\$1,261,800 73	\$1,896,775 76
Out of which the following appropriations were made by the Executive Committee:			
For new construction and permanent betterments.....		\$289,971 12	\$289,971 12
For interest on Car Trust Notes for deferred payments on 1000 box cars and 750 coal cars, purchased from American Car & Foundry Co. For depreciation of equipment.....		330,675 52	330,675 52
And the remaining Surplus carried to credit of Profit and Loss.....	\$634,975 03	341,154 09	976,129 12
	\$634,975 03	\$1,261,800 73	\$1,896,775 76

A comparison of the various classes of earnings with those of the preceding year is as follows:

	1903.	1902.	Increase.	Per cent. of increase.
Gross.....	\$17,398,576 18	\$15,006,243 15	\$2,392,333 03	16.01
Freight.....	4,585,163 17	4,253,757 73	331,405 44	7.79
Passenger.....	530,969 02	471,751 04	59,217 98	12.56
Mail.....	630,336 39	526,320 72	104,015 67	19.76
Express.....	844,165 67	762,809 85	81,355 82	10.65
Miscellaneous.....				
Total.....	\$24,289,510 43	\$21,620,882 49	\$2,668,627 94	12.34

The gross earnings per mile of road operated in 1903 were \$6608.98, as against \$6647.77 in preceding year, a decrease of \$38.79, or one-half of 1 per cent. This slight decrease in the earnings per mile is accounted for by the fact that the earning capacity of the new mileage added during the year has not yet been fully developed.

A comparison of the different Operating Expense Accounts with those of the preceding year is as follows:

	1903.	1902.	Increase.	Per cent. of increase.
Operating Expenses.....				
Maintenance of Road and Structures.....	\$3,438,839 62	\$2,973,847 14	\$464,992 48	15.64
Maintenance of Equipment.....	2,613,160 62	2,212,306 07	400,854 55	18.12
Transportation and Traffic.....	9,019,253 75	7,649,347 03	1,369,906 72	17.90
General Expenses.....	804,722 81	631,970 36	172,752 45	27.33
Total.....	\$15,875,976 78	\$13,472,470 60	\$2,403,506 18	17.84

The Net Earnings increased \$265,121.76, or 3.2 per cent.

The following are the percentages of the different Operating Expense Accounts to Earnings and comparison with preceding year:

	1903.	1902.
Maintenance of Road and Structures.....	14.16	13.78
Maintenance of Equipment.....	10.76	10.23
Transportation and Traffic.....	37.15	35.38
General Expenses.....	3.31	2.92
Total.....	65.36	62.31

The following are the Operating Expenses per mile of road and comparison with preceding year:

	1903.	1902.
Maintenance of Road and Structures.....	\$935 68	\$915 90
Maintenance of Equipment.....	711 02	680 22
Transportation and Traffic.....	2,454 05	2,351 94
General Expenses.....	218 96	194 32
Total.....	\$4,319 72	\$4,142 38

The increase in Operating Expenses per mile was \$177.34, or 4.2 per cent., and is accounted for by the increase in wages granted during the year, the increased price of fuel, and to a considerable extent by the extraordinary expenses incurred by reason of the unusual floods which happened during the early spring and summer months.

## FINANCIAL.

## CAPITAL STOCK.

The Capital Stock of the Company remained unchanged at the end of the fiscal year, and is as follows:

	Authorized.	Issued.
First Preferred.....	\$5,000,000	\$5,000,000
Second Preferred.....	31,000,000	16,000,000
Common.....	64,000,000	29,000,000
Total.....	\$100,000,000	\$50,000,000

At June 30, 1903, the Treasury holdings of the Capital Stock issued amounted to \$6737.70, and consisted of:

First Preferred.....	\$6,535 10
Second Preferred.....	53 01
Common.....	149 70

\$88 of Fractional First Preferred Scrip and \$54.20 of Common Scrip were purchased, and 16,922 shares of the Treasury holdings of the Common Stock were disposed of during the year.

## FUNDED DEBT.

The changes in the Funded Debt during the year, as shown by the Balance Sheet, make a net increase of \$17,725,500, and which is made up as follows:

\$12,127,000 in St. L. & S. F. R. R. Refunding 4s, of which \$2,000,000 were for Improvement and New Equipment expenditures made in years 1902 and 1903.	
3,576,000 were for the purchase of the Stock and Bonds of the Oklahoma City & Western R. R. and the Oklahoma City & Texas R. R.	
4,531,000 were for the purchase of the Stock and Bonds of the Blackwell, End & Southern Railway and the Blackwell, End & Texas Railway.	
1,208,000 were for the purchase of the Stock and Bonds of the Red River, Texas & Southern Railway.	
736,000 were for the purchase of the Stock and Bonds of the Ft. Worth & Rio Grande Railway.	
76,000 were for \$61,000 of Underlying Lien Bonds redeemed and for refunding purposes.	
4,000,000 in Collateral Trust 4 Per Cent. Gold Notes issued for the purpose of acquiring all of the capital stock of the St. Louis, Memphis & Southeastern R. R. (\$1,417,000 still remains in Treasury).	
\$16,127,000 Total.	
61,000 Deducted, account Underlying Bonds redeemed during the year.	
\$16,066,000 Net Increase.	

Leaschold Estate (the Kansas City, Fort Scott & Memphis Railway Co.). In Kansas City, Fort Scott & Memphis Railway Co. Refunding 4 Per Cent. Gold Bonds, of which \$469,500 were for Improvement and New Equipment expenditures during the year 1903; \$1,369,000 were for redemption of Underlying Bonds and for refunding purposes.

\$1,819,500 Total. 247,000 Deducted, account Underlying Bonds redeemed during the year.

\$1,572,500 Net Increase.

## Auxiliary Companies.

\$1,000,000 in Birmingham Belt R. R. Co. First Mortgage 4 Per Cent. Gold Bonds issued for part payment of the property of that Company (out of proceeds of which \$100,000 is reserved for improvements). 994,000 in Ft. Worth & Rio Grande Ry. Co. First Mortgage 4 Per Cent. Bonds (placed under the St. L. & S. F. R. R. Co. Refunding Mortgage). \$815,000 in Red River, Texas & Southern Ry. Co. First Mortgage Bonds (placed under the St. L. & S. F. R. R. Co. Refunding Mortgage). \$339,000 in Paris & Great Northern R. R. Co. First Mortgage Bonds (placed under the St. L. & S. F. R. R. Co. Trust Mortgage of 1887). \$200,000 in St. Louis, San Francisco & Texas Ry. Co. First Mortgage Bonds (placed under the St. L. & S. F. R. R. Co. Refunding Mortgage).

\$3,348,000 Total. 913,000 Deducted, being Birmingham Equipment Co. Bonds redeemed during the year and for which K. C., F. S. & M. Ry. Co. Refunding 4s were issued.

\$2,435,000 Increase. 2,348,000 Deducted, as that amount of Bonds of Auxiliary Companies is owned by and covered by mortgages of the St. Louis & San Francisco Railroad Co.

\$87,000 Net Increase.

\$17,725,500 Total Net Increase in System Funded Debt.

\*By reason of the independent organizations of the Auxiliary Companies in Texas, required by the Texas State laws, the Bonds of these Companies are included as a liability in the Balance Sheet for the first time.

## BONDS IN TREASURY.

The par amount of bonds held in the treasury as a current asset at June 30, 1902, was \$3,544,625, and this were added during the fiscal year as follows:

\$2,000,000 00 Refunding 4 Per Cent. Bonds issued for improvement and new equipment expenditures made in years 1902 and 1903.	
3,576,000 00 Refunding 4 Per Cent. Bonds issued to cover the purchase price of the Stock and Bonds of the Oklahoma City & Western and the Oklahoma City & Texas Railroads.	
1,208,000 00 Refunding 4 Per Cent. Bonds issued to cover the purchase price of the Stock and Bonds of the Red River, Texas & Southern Railway.	
736,000 00 Refunding Mortgage 4 Per Cent. Bonds issued, \$730,000 in part payment of the purchase price of the Stock and Bonds of the Ft. Worth & Rio Grande Railway, covering Road Brownwood to Brady, and \$6000 for 128 shares of Fort Worth & Rio Grande Railway Co. Stock purchased.	
8,000 00 Refunding Mortgage 4 Per Cent. Bonds issued for a like amount of Underlying Bonds redeemed through Sinking Funds.	
459,500 00 Kansas City, Fort Scott & Memphis Railway Co. Refunding 4 Per Cent. Bonds issued for improvement and new equipment expenditures during the year.	
247,000 00 Kansas City, Fort Scott & Memphis Railway Co. Refunding 4 Per Cent. Bonds issued for a like amount of Underlying Bonds redeemed through Sinking Funds.	
47,500 00 St. Louis, Memphis & Southeastern Railroad Co. 4 Per Cent. Bonds, \$45,000 of which were received in exchange for Missouri & Arkansas Railroad Co.'s Stock and \$2500 paid for in cash.	
52,077 27 St. Louis & San Francisco Railroad Co. 4 Per Cent. Gold Notes and Scrip received in exchange for Southern Missouri & Arkansas Railroad Co.'s Stock.	
150 00 St. Louis & San Francisco Railroad Co. Consolidated 4 Per Cent. Bond Scrip purchased.	
\$3,334,236 27 Total added during the year.	



\$8,334,236 27 Amount brought forward.

Deduct—

\$6,265,000 00 Refunding 4 Per Cent. Bonds sold.

908,000 00 K. C., F. & M. Ry. Co. 4 Per Cent. Bonds sold.

125 00 Consolidated Mortgage 4 Per Cent. Bond Scrip cancelled.

\$7,173,125 90 Total to deduct.

\$1,161,111 27 Net par amount of Bonds added during the year, making a total par amount of Bonds and Scrip in Treasury at June 30, 1903, of \$4,705,736 27. See statement H, page 41 of pamphlet report, for full description of securities owned.

#### ADVANCES ACCOUNT OF CONSTRUCTION.

The Company at June 30, 1903, had advanced to roads under construction and for surveys \$2,164,917.02, as follows:

Missouri & Southeastern Construction Co.: \$586,585 00

Account St. Louis, Memphis & Southeastern R. R. Construction..... 167,216 17

Choctaw Construction Co.: 215,000 00

Account St. Louis, San Francisco & New Orleans R. R. Construction..... 61,715 16

International Equipment Co.: 70,720 33

Account Ft. Worth & Rio Grande Ry. Construction (additional over Refunding 4 Per Cent. Bonds issued)..... 649,015 82

Memphis & New Orleans Extension..... 14,437 96

New Orleans Terminal Co.: 141,701 61

Oklahoma City & Western R. R. Construction (additional over Refunding 4 Per Cent. Bonds issued)..... 33,438 39

Oklahoma City & Southeastern Ry. Construction..... 20,149 93

Red River, Texas & Southern Ry. Construction (additional over Refunding 4 Per Cent. Bonds issued).....

Taylor City Belt Ry. Co.: \$2,164,917 02

Miscellaneous Surveys.....

Total.....

These advances have temporarily increased the current liabilities, but the Company will be reimbursed later.

#### EQUIPMENT NOTES.

During the year the Company issued additional equipment notes as follows:

Series "B": \$1,235,000 00 dated August 1, 1902, payable semi-annually, February and August, \$60,000 and \$64,000, respectively, each year, and bearing interest at 4 per cent. per annum; last payment August, 1912.

Series "C": \$738,000 00 dated October 15, 1902; fifty notes of \$1000 each, payable every six months from November 1, 1902; bearing interest at 4 per cent. per annum; last payment November, 1912.

American Car & Foundry Co. Equip. Notes: \$1,091,578 80, 120 notes of denomination of \$3211 each, 120 of \$2793.57 each, and 120 of \$2091.92 each, dated February 27, 1903; March 27, 1903, and April 10, 1903, respectively; one note of each payable upon the corresponding day of each consecutive month thereafter.

\$283,408.55 of equipment notes were paid and cancelled during the year, \$132,408.55 of which were notes of the above issues, and \$151,000 were Blair & Co. Equipment Trust Notes issued during the previous year.

For description of equipment purchased see statement Q, page 61 of pamphlet report.

The increases in items "Notes Payable," "Audited Vouchers and Pay-Rolls" and "Due to Companies and Individuals," as shown by the Balance Sheet, are the results of large expenditures for construction purposes and for the acquisition of additional property. As soon as the financing of the new properties, which are being constructed, is completed these liabilities will be paid off.

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Amounts brought forward.....	342	105	60	387
Freight Cars:				
Box.....	7,042	3,177	295	10,014
Fruit (Freight).....	75	95	1	169
Stock.....	984	1,170	18	965
Coal.....	7,195	1,170	134	8,172
Flat.....	587	98	20	665
Refrigerator.....	107	1	...	108
Furniture.....	736	...	9	727
Caboose.....	272	44	8	308
Total Freight Cars.....	16,939	4,585	395	21,129
Miscellaneous Cars:				
Derrick.....	4	3	...	7
Pile Driver.....	5	1	...	6
Steam Shovel.....	3	1	...	4
Boarding.....	10	1	1	12
Water.....	9	...	1	8
Class Tank.....	...	...	...	...
Steam Wrecker.....	3	1	...	4
Ballast Unloader.....	...	1	...	1
Tool.....	3	3	...	6
Service.....	1	1	...	2
Ballast.....	174	155	67	392
Ballast—Rodgers and Ingoldshy.....	95	50	155	223
Cinder.....	159	64	...	223
Distributing.....	4	1	...	5
Ditcher.....	1	2	...	3
Total Miscellaneous Cars.....	472	295	224	543
Total Cars.....	17,753	4,985	679	22,069
Grand Total Engines and Cars.....	18,263	5,063	681	22,645

The expenditure per freight car naturally shows a decrease on account of the large number of new cars added during the year, and which required but slight repairs.

The book value of all equipment destroyed or sold during the year was charged against operating expenses.

A comparison of the equipment owned at June 30, 1903, with that of the preceding year is as follows:

	1902.	1903.	Increased per cent.
Locomotives.....	586	510	14.09
Passenger Train Cars.....	387	342	13.15
Freight Train Cars.....	21,129	16,939	24.74

The tonnage capacity of freight cars at June 30, 1903, was 559,836 tons, and for the preceding year 421,180 tons, an increase over the preceding year of 138,656 tons, or 32.92 per cent.

The average capacity per freight car was 26.89 tons, as against 25.27 tons for preceding year, an increase of 1.62 tons, or 6.41 per cent.

The tractive power of locomotives on level track was 1,421,790 tons, as against 1,148,350 tons for the preceding year, an increase of 23.8 per cent.

The miles of road per engine at June 30, 1903, was 6.27, as against 6.37 for the preceding year.

The miles of road per passenger train car was 9.50, the same as in the preceding year.

The number of freight cars per mile of road was 5.67 cars, as compared with 5.12 cars for preceding year.

See table Q, page 61 of pamphlet report, giving description of all equipment owned.

#### TRAFFIC.

On page 67 of pamphlet report, table V, is given the usual statement in condensed form of freight and passenger statistics by years for the seven fiscal years ended June 30, 1903.

#### FREIGHT.

The increase in the tonnage carried during the fiscal year over that of the preceding year was 981,280 tons, or 10.32 per cent., and the increase in the ton mileage was 112,039,578, or 6.84 per cent. The average haul decreased 6.45 miles, or 3.58 per cent., as compared with the preceding year.

The ton mileage density of commercial freight per mile of road for the year was 476.05 tons, as against 503,499 tons for the preceding year, a decrease of 27,448 tons, or 5 per cent.

This decrease in density of tonnage is natural, for the reason that the business of the new mileage added during the year has been developed to only a limited extent.

The average rate per ton increased one cent, and the average rate per ton mile .043 of a cent over the preceding year. The increase in the rates per ton and per ton mile was by reason of the larger percentage of increase in tonnage of the higher class of shipments and the more satisfactory rate situation.

The average load in tons of commercial freight per loaded car for the year was 15.27 tons, against 14.78 tons for the preceding year, an increase of .49 of a ton, or 3.32 per cent.

The average load per loaded car, including Company's freight, was 17.34 tons, against 16.19 tons for the preceding year, an increase of 1.15 tons, or 7.10 per cent.

The average train load of commercial freight was 195.01 tons, against 186.91 tons for the preceding year, an increase of 8.10 tons, or 4.33 per cent.

Including Company's freight, the average train load for the year was 221.39 tons, against 204.73 tons for the preceding year, an increase of 16.66 tons, or 8.14 per cent.

The freight train mileage increased 210,680 miles, or 2.40 per cent. The loaded car mileage increased 3,787,503 miles, or 3.42 per cent. The empty car mileage decreased 1,155,231 miles, or nearly 2 per cent.

#### PASSENGER.

The increase in the passengers carried during the fiscal year was 503,293, or 13.63 per cent., over the preceding year, and the increase in the passengers carried one mile was 29,077,519, or 15.70 per cent. The average distance each passenger was carried was 51.25 miles, against 50.26 miles for the preceding year, an increase of .99 of a mile, or 1.77 per cent.

The average rate per passenger increased 1.13 cents over that of the preceding year, and the average rate per passenger per mile decreased .017 of a cent, or seven-tenths of 1 per cent.

The number of through passengers carried during the year increased 20.97 per cent., and the through passengers carried one mile 19.21 per cent. The local passengers carried increased 13.03 per cent., and the local passengers carried one mile 14.11 per cent.

The passenger train mileage increased 536,259 miles, or 10.03 per cent., and the earnings per passenger train mile increased 2.3 per cent.

(For further detail in respect to train and traffic statistics see table L, page 53 of pamphlet report.)

#### PHYSICAL CONDITION.

The Company has pursued the same policy as in previous years of charging the total cost of all renewals of buildings, bridges and steel rails to operating expenses.

23,881 tons of new 75-pound steel rail were laid in track during the fiscal year, as against 15,563 tons laid during the preceding year.

1,051,219 new cross-ties and 263 sets of switch ties were placed in track during the year, as against 1,273,881 new cross-ties and 528 sets of switch ties laid during the preceding year.

Sixteen bridges of twenty-five spans, and a total length of 2100 feet, were replaced by ten new bridges of fifteen heavier spans of 1497 feet, reducing the length of the bridges by question 504 feet. Nine of the spans were replaced by arch culverts, and one span was replaced by cast-iron pipe.

To accommodate the increased traffic and facilitate the handling of trains, 120.57 miles of passing, yard and industrial tracks were built during the year, and the cost of same (\$530,960.32) was charged to capital account. 190.20 miles were ballasted with crushed rock and gravel during the year at a total cost of \$383,080.05, of which \$74,238.61 was charged to operating expenses and \$308,841.44 to capital account.

Construction of a second main track between St. Louis and Windsor Springs, a distance of thirteen and one-half miles, was commenced during the past year, and at June 30 three and one-half miles of same were completed. It is expected that this entire work will be completed before December 1, 1903.

This much-needed improvement will expedite and facilitate the handling of both suburban and through trains, as well as the additional business between Lindenwood and St. Louis anticipated with the completion of the line via Cape Girardeau to Memphis—the St. Louis, Memphis & Southeastern Railroad.

#### GENERAL.

The prosperous condition which has prevailed during the past year in the territory tributary to the Company's lines continues, and an average good crop of farm products is assured for the current year. The outlook for an increase in coal production is also bright, so that a continuation of heavy freight traffic for another year may be expected.

The regular quarterly dividends on the Company's first and second preferred stocks were declared and paid during the year, and the guaranteed dividends on the Kansas City, Fort Scott & Memphis Railway Co. Preferred Stock Trust Certificates and the Chicago & Eastern Illinois Railroad Co. Common and Preferred Stock Trust Certificates were also duly paid, as shown by the Income Account.

In consequence of the considerable new mileage opened for traffic during the year the increase in our fixed charges is temporarily somewhat out of proportion to net earnings.

The territory served by the new lines is not only productive, but is being rapidly developed, and is now raising and marketing since the close of the fiscal year its first crop. Therefore both gross and net earnings on these new lines were smaller than we shall have in the future, while the full interest charges were borne thereon since taking them into the system.

The cost of "Franchises and Property" has been charged with the difference between cost of underlying bonds refunded and proceeds of 4 per cent. refunding bonds sold between heretofore carried in "Suspense Account," as shown in previous Annual Report. A separate account will be kept of this item, and it has been decided by the Board that an appropriation shall be made from Income or Profit and Loss Account, as may be determined.

#### STATEMENT OF ROLLING STOCK, SHOWING THE DIFFERENT CLASSES, AS OF JUNE 30, 1903.

Description.	Owned June 30, 1902.	Changed, built and purchased.	Destroyed and changed.	Owned June 30, 1903.
Locomotives.....	510	78	2	586
Passenger Cars:				
Coaches—First Class.....	84	14	20	78
Coaches—Second Class.....	50	21	1	70
Chair.....	49	7	...	56
Combination:				
Coach and Baggage.....	17	2	...	19
Coach and Mail.....	25	...	...	25
Coach, Mail and Baggage.....	11	...	4	7
Baggage and Express.....	42	29	...	65
Baggage and Fruit.....	1	...	1	...
Baggage, Mail and Express.....	6	19	2	22
Mail and Express.....	11	...	11	...
Mail and Baggage.....	...	1	...	1
Baggage.....	14	4	18	...
Express.....	3	...	3	...
Mail.....	13	6	...	19
Official.....	8	...	...	8
Dining.....	...	2	...	2
Observation Cafe.....	...	3	...	7
Fruit (Passenger).....	6	3	...	9
Total Passenger Cars.....	342	136	00	587

annually, so that at or before maturity of the refunding bonds the entire amount will thus be written off.

Statement of all charges and credits made to Profit and Loss Account during the year is given in table A, page 30 of pamphlet report.

A separate report showing the results of operation of the Chicago & Eastern Illinois Railroad Co. for the fiscal year, and its financial condition at the end thereof, has been published, and the statistics of the Chicago & Eastern Illinois Railroad Co. are therefore not included in the figures in this Company's report for the year; but in order to show the consolidated results of operation of the System, including those of the Chicago & Eastern Illinois Railroad Co., there is appended to this report (pages 75-78 of pamphlet report) a consolidated Income Account, Profit and Loss Account and Balance Sheet, showing the results of operation of both properties for the year and their financial condition at the end thereof.

B. F. YOAKUM, President.

STATEMENT OF GENERAL PROFIT AND LOSS ACCOUNT OF THE ST. LOUIS & SAN FRANCISCO RAILROAD SYSTEM, INCLUDING THE CHICAGO & EASTERN ILLINOIS RAILROAD CO. AND ADJUSTMENTS THEREIN, JUNE 30, 1902, TO JUNE 30, 1903.

	St. L. & S. F. R. R. System.	C. & E. I. R. R. Co.	Total.
CREDIT.			
By Balance at June 30, 1902.....	\$3,289,462 38	\$1,701,071 76	\$4,970,534 14
By Surplus for the year ended June 30, 1903, as per Income Accounts.....	634,975 03	341,151 00	976,126 03
By amount refunded by United States Internal Revenue Department for revenue stamps erroneously used on Voting Trust Certificates.....	7,918 80		7,918 80
By Adjustment of Sinking Fund Accounts, being balance of amounts previously charged to Income Account.....	83,956 38		83,956 38
By Miscellaneous Accounts closed out:			
Total Credit.....	\$3,976,392 59		\$3,976,392 59
Total Debit.....	8,781 89		8,781 89
	207,681 97		207,681 97

CONDENSED GENERAL BALANCE SHEET, INCLUDING THE CHICAGO & EASTERN ILLINOIS RAILROAD CO., AT JUNE 30, 1903.

ASSETS.	St. L. & S. F. R. R. System.	C. & E. I. R. R. Co.	Total.
To Franchises and Property.....	\$122,121,599 56	\$37,676,553 43	\$159,798,152 99
To Stocks and Bonds Owned.....	3,313,045 69		3,313,045 69
Total Franchises and Property.....	\$125,434,645 25	\$37,676,553 43	\$163,111,198 68
To Leasehold Estate—The K. C. F. S. & M. Ry. ....	\$63,691,774 28		\$63,691,774 28
To Franchises and Property, Auxiliary Companies.....	33,210,533 79		33,210,533 79
To C. & E. I. R. R. Co., Preferred Stock, Cost of (see contra).....	6,257,550 00		6,257,550 00
To C. & E. I. R. R. Co., Common Stock, Cost of (see contra).....	17,660,500 00		17,660,500 00
To New Equipment under Blair & Co. Equipment Trust (see contra).....	1,114,000 00		1,114,000 00
To New Equipment, Series "B" (see contra).....	1,180,000 00		1,180,000 00
To New Equipment, Series "C" (see contra).....	688,000 00		688,000 00
To American Car & Foundry Co. Trust Equipment, Cost of.....	795,911 29		795,911 29
To Refunding Mortgage, 4 Per Cent. Bonds in Trust with Continental Trust Co. of New York (see contra).....	200,000 00		200,000 00
To Mississippi Valley Trust Co. for deposit by Special Master in Chancery for Kansas Midland Ry. (see contra).....	873 21		873 21
To Current Assets:			
Cash in Treasury.....	\$1,548,979 85	\$739,209 78	\$2,288,189 63
Cash in Trust Companies for Coupons and Sinking Funds.....	315,724 95		315,724 95
Due from Agents and Conductors.....	1,192,548 23	593,415 13	1,785,963 36
Due from Railroad Companies, account Traffic.....	109,969 97		109,969 97
Due from Companies and Individuals.....	2,525,478 59	490,944 96	3,016,423 55
Due from United States Government.....	137,781 70	21,074 74	158,856 44
Supplies on hand.....	1,007,543 15	621,096 11	1,628,639 26
Unadjusted Open Accounts (balance).....	505,283 23		505,283 23
Securities in Treasury, Cost of.....	5,465,274 03	1,000,000 00	6,465,274 03
Other Investments, including Terminal Grounds and Buildings in Chicago.....		2,985,663 34	2,985,663 34
Advances, account Roads under Construction.....	2,164,917 02	419,736 18	2,584,653 20
Total Current Assets.....	\$15,590,491 73	\$6,880,693 27	\$22,471,185 00
To Trustees' Sinking Funds Account.....	\$1,030,308 95		\$1,030,308 95
To Sinking Funds.....	144,844 77	640,630 40	785,475 17
To Old Colony Trust Co. Improvement Fund.....	100,000 00		100,000 00
Total Assets.....	\$267,159,433 27	\$45,197,877 10	\$312,357,310 37

Total Mileage at June 30, 1903—St. Louis & San Francisco R. R. System.....	3938.17 miles.
Chicago & Eastern Illinois R. R. ....	751.45 "
Grand Total.....	4689.62 miles.

CLASSIFICATION OF FREIGHT TONNAGE OF THE SYSTEM FOR THE YEAR ENDED JUNE 30, 1903, AND COMPARISON WITH PREVIOUS YEAR.

	1903.	Per cent. of total tonnage.	1902.	Per cent. of total tonnage.
2000 Pounds One Ton.				
Products of Agriculture:				
Wheat.....	320,284		217,225	
Other Grain.....	481,439 5		3 0 652 2	
Total Grain.....	124,516 4		54,489 5	
Flour.....	926,369 9		702,417	
Other Mill Products.....	257,002 7		241,961 3	
Hay.....	123,504 3		109,631 3	
Cotton.....	201,906 8		132,259 7	
Fruit and Vegetables.....	165,517 8		121,525 5	
Cottonseed and its Products.....	153,568 8		208 061 8	
Total Products of Agriculture.....	1,989,938 5	19.80	1,502,840	16.57
Products of Animals:				
Live Stock.....	398,647 6		431,350 1	
Other Packing-House Products.....	139,867 7		197,163 3	
Poultry, Game and Fish.....	9,260 4		9,240	
Wool.....	432 5		1,176 4	
Hides and Leather.....	3,848 9		2,999 6	
Total Products of Animals.....	552,057 1	05.49	641,929 4	07.08
Products of Mines:				
Bituminous Coal.....	3,518,540 6		3,182,383 4	
Coke.....	101,880 7		68,556 7	
Iron.....	198,416 2		203,878 3	
Stone, Sand and other like articles.....	316,340 6		384,602 6	
Total Products of Mines.....	4,135,208 1	41.15	3,839,421	42.34
Products of the Forest:				
Lumber.....	1,379,926 3	13.73	1,313,333 9	14.48
Manufactures:				
Petroleum and other Oils.....	70,182 8		55,965 5	
Sugar.....	41,109 4		51,345 6	
Iron, Pig and Bloom.....	178,421 8		148,607 9	
Iron and Steel Rails.....	86,109 1		86 136 3	
Other Castings and Machinery.....	110,310 7		67,610 4	
Bar and Sheet Metal.....	81,731 4		78,843 2	
Cement, Brick and Lime.....	415,317 6		366,288 2	

Amounts brought forward.....	\$4,203,993 56	\$1,742,225 85	\$5,946,219 41
By Liquidating Dividend on 548 shares Pelee City Real Estate Co. Stock over and above book value of said stock.....	2,236 69		2,236 69
By balance of proceeds of sale of \$7500 in City of Baxter (Kan.) 5 Per Cent. Bonds over book value.....	6,757 29		6,757 29
By amount received from Chicago & Western Indiana R. R. Co. for extinguishment of special privilege under its lease dated October 24, 1879.....		551,246 50	551,246 50
By amount received from Belt Railway Co. of Chicago for release of leases of the Belt Ry. Co. and C. & W. I. R. R. Co.....		120,000 00	120,000 00
Total Credit.....	\$4,212,987 54	\$2,713,472 35	\$6,926,459 89

DEBIT.			
To Instalment from Suspense Account, on account of difference between the cost of Underlying Bonds refunded and the proceeds of the Refunding Bonds sold and the commission paid therefor, as authorized by the Board.....	\$250,000 00		\$250,000 00
To Engraving, Recording and Certifying Bonds and Stock issued during the fiscal year, and Legal Services in connection therewith.....	32,624 81		32,624 81
To Taxes for the year 1902 on lands in New Mexico and Arizona.....	8,821 85		8,821 85
To amount advanced Crescent Hotel Co. to reconstruct hotel.....	12,314 49		12,314 49
Total Debit.....	\$303,761 15		\$303,761 15
Balance.....	3,909,226 39	\$2,713,472 35	6,622,698 74
	\$4,212,987 54	\$2,713,472 35	\$6,926,459 89
By Balance at Credit June 30, 1903.....	\$3,909,226 39	\$2,713,472 35	\$6,622,698 74

LIABILITIES.	St. L. & S. F. R. R. System.	C. & E. I. R. R. Co.	Total.
By Capital Stock:			
1st Preferred.....	\$5,000,000 00	\$6,830,700 00	\$11,830,700 00
2d Preferred.....	16,000,000 00		16,000,000 00
Common.....	29,000,000 00	7,204,400 00	36,204,400 00
By Funded Debt.....	75,086,925 00	25,625,000 00	100,711,925 00
Total Capital Stock and Bonds.....	\$125,086,925 00	\$39,660,100 00	\$164,747,025 00
By Outstanding Securities on Leasehold Estate—The K. C. F. S. & M. Ry.: ..			
Preferred Certificates.....	\$13,510,000 00		\$13,510,000 00
Common.....	15,000,000 00		15,000,000 00
Funded Debt and Equipment Notes.....	35,063,110 00		35,063,110 00
Total Outstanding Securities on Leasehold Estate, The K. C. F. S. & M. Ry. ....	\$63,573,110 00		\$63,573,110 00
By Capital Stock, Auxiliary Companies.....	\$14,198,700 00		\$14,198,700 00
By Funded Debt, Auxiliary Companies.....	19,106,920 00		19,106,920 00
Total Capital Stock and Bonds Auxiliary Companies.....	\$33,305,620 00		\$33,305,620 00
By Preferred Stock Trust Certificates, C. & E. I. R. R. (see contra).....	\$6,257,550 00		\$6,257,550 00
By Common Stock Trust Certificates, C. & E. I. R. R. (see contra).....	17,660,500 00		17,660,500 00
By Equipment Notes, Blair & Co. (see contra).....	1,114,000 00		1,114,000 00
By Equipment Notes, Series "B" (see contra).....	1,180,000 00		1,180,000 00
By Equipment Notes, Series "C" (see contra).....	688,000 00		688,000 00
By Equipment Notes, Amer. Car & Foundry Co. Refunding Mortgage 4 Per Cent. Bonds, Northwestern Division, Improvement and Equipment Fund (see contra).....	200,000 00		200,000 00
By Special Master, Kansas Midland Ry. (see contra).....	873 21		873 21
By Deferred Payments—O. C. & W. R. R. ....	2,149,136 30		2,149,136 30
By Current Liabilities:			
Notes Payable.....	\$2,215,000 00		\$2,215,000 00
Audited Vouchers and Pay-Rolls.....	3,364,768 93	\$845 88 27	4,210,627 20
Due to Companies and Individuals.....	1,412,698 70		1,412,698 70
Due to R. R. Companies, account Traffic.....	148,477 51		148,477 51
Dividends due and uncalled for.....		319,632 00	319,632 00
Interest on Bonds, Matured.....	1,490,045 70		1,490,045 70
Interest on Bonds, Accrued (not due).....	937,265 76	304,069 24	1,241,335 00
Taxes, Accrued (not due).....	162,375 28	48,950 90	211,326 18
Total Current Liabilities.....	\$9,730,541 98	\$1,557,610 51	\$11,288,152 49
By Sinking Funds, Accrued.....	\$1,151,279 89		\$1,151,279 89
By Kan. City, Osceola & So. Ry. Interest Fund.....	21,532 11		21,532 11
By Improvement Fund (K. C. & M. Ry. & Bridge Co.).....	18,089 29		18,089 29
Total Liabilities.....	\$33,201,328 03	\$42,454 404 75	\$33,685,782 73
By Accounts to Balance:			
Land Income Account (The K. C. F. S. & M. Ry. Co.).....	48,878 85		48,878 85
Profit and Loss.....	3,909,226 39	2,713,472 35	6,622,698 74
Total.....	\$267,159,433 27	\$45,197,877 10	\$312,357,310 37

\*All owned by the Company except \$51,100 of the Fort Worth & Rio Grande Railway Co. issue.  
\$2,747,500 of the Funded Debt of Auxiliary Companies is owned by the Company, of which \$2,000,000 is deposited under the Refunding Mortgage, \$399,500 under the K. C. F. S. & M. Ry. Co. Refunding Mortgage, and \$347,500 under the Trust Mortgage of 1887.

Amounts brought forward.....	995,245 8	80.17	854,847.1	80.47
Agricultural Implements.....	23,555 8		24,048 2	
Wagons, Carriages, Tools, etc.....	33,148 5		34,670 9	
Wine, Liquor and Beer.....	33,372 5		28,277 3	
Household Goods and Furniture.....	77,135 8		47,572 9	
Total Manufactures.....	1,162,458 4	11.57	989,416 4	10.91
Merchandise.....	474,074 5	04.72	411,577 7	04.54
Miscellaneous, other Commodities not mentioned above.....	356,288 4	03.54	370,162	04.06
Total Tonnage, exclusive of Company's Business.....	10,049,931 3	100	9,068,650 4	100
Company's Business.....	2,190,701 8	17.90	1,539,539 4	14.51
Total Tonnage, including Company's Business.....	12,240,633 1		10,608,189 8	
Average mileage operated 1903.....			3,675 23	
Average mileage operated 1902.....			3,252 35	

The Report contains condensed statements for the entire System, including Chicago & Eastern Illinois Railroad Co., and shows the following results:

Average mileage.....	4,418.62	Increase	433.77
Gross earnings.....	\$22,013,358 33	Increase	\$4,114,981 87
Gross earnings per mile.....	7,245 10	Increase	243 99
Net earnings.....	11,824,793 74	Increase	865,131 16
Net earnings per mile.....	2,676 36	Decrease	73 97

Balance after payment of guaranteed dividends and preferred stock dividends is \$1,896,000.00, or something over 7 per cent. on \$27,000,000 of outstanding Frisco common stock.

The figures for last year were as follows:

Average mileage.....	3,994.85
Gross earnings.....	\$27,398,376 46
Gross earnings per mile.....	7,001 11
Net earnings.....	10,969,661 58
Net earnings per mile.....	2,750 33

In consequence of the considerable new mileage opened for traffic during the year (523.83 miles) the increase in the fixed charges is temporarily somewhat out of proportion to net earnings. The territory served by the new lines is not only productive, but is being rapidly developed, and is now raising and marketing since the close of the fiscal year its first crop. Therefore both gross and net earnings on these new lines were smaller than they will be in the future, while the full interest charges were borne thereon since taking them into the System.



[Continued from Page 314.]

keeping well posted regarding improvements in textile-manufacturing equipment should not fail to send for copies of "Cotton Chats."

### The "Original Rubber Man."

The "Original Rubber Man" has had a hand in the success of many of the first-class mills in this country and other countries where mechanical rubber goods enter into the equipment. He has been identified with the mill business since 1828. Mill-owners who may happen not to be acquainted with "the man" referred to are advised that he is composed of the products made by the Boston Belting Co. of Boston, Mass. This company's belting, hose, packings, rollers, gaskets, mats and a multitude of other mechanical rubber goods embody those essentials that the best mills demand in the rubber goods which they use. There is a place in every mill for the "Original Rubber Man." This is indicated in a new folder issued by the company. The Carey Machinery & Supply Co., 25 Light street, Baltimore, is Southern agent.

### Scott & Williams Knitting Machinery

There has been steady progress shown recently in the Southern knitting industry. A number of plants have been built and established mills (of which the South has a goodly number) have been enlarged and improved. The fact that new mills are constantly being projected makes very timely a reference to Messrs. Scott & Williams, who have been designing and constructing knitting machinery since 1865. This firm is well known for its output of modern knitting machines, ribbers, loopers and other accompanying apparatus, and for general supplies for knitting mills. Its catalogue gives many details that should be known to projectors of knitting plants and to owners of mills that are to be enlarged. The Scott & Williams catalogue is fully illustrated, and describes the various types of machines offered to buyers of this class of mechanical equipment. Many of the leading mills of America are using the machines. Ask the firm for catalogue. Main offices at 2679 E. Cumberland street, Philadelphia, Pa.

### Superior Mechanical Rubber Goods.

There are certainly few, if any, manufacturing plants wherein mechanical rubber goods are not used. During late years invention and processes of manufacture have brought such products to a point of excellence that is recognized throughout the industrial world. The Peerless Rubber Manufacturing Co. has been one of the foremost in this field of endeavor, and manufactures a line of superior mechanical rubber goods now generally used in manufacturing establishments, power plants and other scenes of activity. This company is now issuing general catalogue No. 60. Those who use "Rainbow" packing, "Eclipse" gaskets, "Peerless" piston and valve rod packing, "Honest John" hydraulic rainbow core packing and other Peerless manufactures should not fail to obtain a copy of the new catalogue to have on hand as a reference for the latest information on the subjects to which it is devoted. And those who are not yet acquainted with the "Peerless" products will be enabled to obtain some pointers from this catalogue regarding what kind of mechanical rubber goods to buy when anxious to obtain the best possible results. Company's offices at 16 Warren street, New York.

### Graphite Lubricants.

Graphite lubrication is now a matter of importance in the mechanical fields. Operators of machinery of all kinds have found graphite lubrication to give results adding to the efficiency and lengthening the life of mechanical equipment to a most satisfactory degree. It is generally conceded that the credit for introducing graphite roofing lubrication to its present condition of importance should be given to the Jos. Dixon Crucible Co. of Jersey City, N. J. This company has been engaged in the graphite industry for nearly four score years, and its experience and equipment enables it to produce graphite products which are most perfectly suited to the uses for which they are designed. It supplies graphite for every purpose for which it is used, handling the mineral in every form in which it naturally occurs, and offering it in a variety of forms for use. Instancing these uses may be mentioned for gas and gasoline engines, spindles and bobbins of textile machinery, scientific instruments, wood surfaces, axles, hoisting and other equipment exposed to the elements, motor chains and a multitude of others. "Graphite Lubricants" is the title of the latest Dixon publication, which should be in the hands of everyone who has occasion to use a lubricant of any character.

## FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

### Review of the Baltimore Market.

Office Manufacturers' Record,  
Baltimore, Md., November 4.

A feature of the Baltimore stock market during the past week was a decided advance in the common stock and income bonds of the Mt. Vernon-Woodberry Cotton Duck Co., which was due to favorable reports concerning its financial condition. United Railways issues also advanced, as did Consolidated Gas. Seaboards and G. B. & S. Brewing issues were dull, and the market generally was quiet.

In the trading United Railways common sold between 8 1/2 and 9; the income bonds from 58 1/2 to 59 1/2, and the 4 per cents from 90 1/2 to 91. Consolidated Gas changed hands at 62 1/2 and 62 3/4, and the 6 per cents at 109 1/2 and 109 3/4; Seaboard common at 13 3/4 and 14, and the preferred at 21 and 22 1/2, the 4 per cents at 67 1/4 to 68 and the 5 per cents at 100 and 108 3/4 and ex-coupon at 97 1/2. Cotton Duck common advanced from 1 1/2 to 3 1/4, and the incomes sold from 14 to 16; United States Cotton Duck at 2 1/2. G. B. & S. Brewing incomes were traded in at 29 and 20 1/2, and the 1sts at 46 and 46 1/4.

Bank shares sold—First National at 142, Citizens' 28, Mechanics' 29.

Other securities traded in were as follows: Atlantic Coast Line Railroad, 105 and 107; Atlantic Coast Line First Consolidated 4s, 91 1/4 and 91 1/2; Northern Central, 85; Columbia & Greenville 1sts, 117; City & Suburban 5s (Baltimore), 113 1/4; West Virginia Central 6s, 110 1/4; Georgia Southern & Florida 1st preferred, 97; Anacostia & Potomac 5s, 89 1/4; Georgia & Alabama Consolidated 5s, 105 1/4 and 105 3/4; South Bound 5s, 106 1/4; Atlanta Street Railway 5s, 104; Georgia, Carolina & Northern 5s, 106 1/2; Knoxville Traction 5s, 101; North Baltimore Traction 5s, 118; Northern Central 5s, 120; International Mercantile Marine preferred, 17 1/4 and 18; Petersburg B 6s, 120 1/2; Metropolitan (Washington) 5s, 116.

### SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended  
November 4, 1903.

Railroad Stocks.	Par.	Bid.	Asked
Georgia Sou. & Fla. 1st Pref.	100	95	98
Georgia Sou. & Fla. 2d Pref.	100	85	90
United Railways & Elec. Co.	100	8 1/2	9
Seaboard Railway Common	100	13 1/2	14
Seaboard Railway Preferred	100	21 1/2	21 3/4
Atlantic Coast Line Railroad	100	105	108
Atlantic Coast Line of Conn.	100	210	250

Bank Stocks.	Par.	Bid.	Asked
Citizens' National Bank	100	100	120
Commercial & Far. Nat. Bank	100	100	120
First National Bank	100	100	120
German Bank	100	100	120
Manufacturers' National Bank	100	100	120
National Bank of Baltimore	100	111	112 1/2
National Exchange Bank	100	109 1/2	112 1/2
National Howard Bank	100	100	110
National Marine Bank	100	100	110
National Mechanics' Bank	100	100	110
National Union Bank of Md.	100	100	110
Second National Bank	100	100	110
Third National Bank	100	100	110

Trust, Fidelity and Casualty Stocks.	Par.	Bid.	Asked
Baltimore Trust & Guarantee	100	100	120
Continental Trust	100	100	120
Fidelity & Deposit	100	100	120
International Trust	100	100	120
Mercantile Trust & Deposit	100	100	120

Miscellaneous Stocks.	Par.	Bid.	Asked
G. B. & S. Brewing Co.	100	5	12
United Elec. L. & P. Pref.	100	50	50
Cotton Duck Voting Trust	100	2	3
Consolidation Coal	100	70	70
Consolidated Gas	100	62 1/2	63

Railroad Bonds.	Par.	Bid.	Asked
Albany & Northern 1st 5s	100	94	94
Atlantic Coast Line 1st 4s	100	91 1/2	91 3/4
Atlanta & Charlotte 1st 7s, 1907	100	108	108
Columbia & Greenville 1st 6s, 1916	100	116 1/2	117
Georgia, Car. & North. 1st 5s, 1929	100	106 1/2	107
Georgia South. & Fla. 1st 5s, 1945	100	110 1/2	111
Georgia Pacific 1st 6s, 1922	100	116	116
Petersburg, Class B 6s, 1926	100	119	120
Raleigh & Augusta 1st 6s, 1926	100	110	110
Seaboard & Roanoke 5s, 1916	100	110	110
Seaboard & Roanoke 5s, 1926	100	111 1/2	111 1/2
Virginia Midland 1st 6s, 1926	100	103	103
Virginia Midland 3d 6s, 1916	100	111 1/2	111 1/2

Virginia Midland 4th 3-4-5s, 1921	100	108	108
Virginia Midland 5th 5s, 1926	100	107 1/2	107 1/2
West. North Carolina Con. 6s, 1914	100	115 1/2	117
West Virginia Central 1st 6s, 1911	100	110 1/2	111
Wilmington & Wel. Gold 5s, 1935	100	115	115
Charleston City Railway 5s, 1925	100	103 1/2	103 1/2
Knoxville Traction 1st 5s, 1928	100	101	101
Newport News & Old Pt. 5s, 1938	100	106	106
Norfolk Street Railway 5s, 1941	100	108	108
United Railways 1st 4s, 1949	100	90 1/2	91 1/2
United Railways Inc. 4s, 1949	100	89 1/2	89 1/2
Seaboard 4s	100	67 1/2	68
Seaboard 10-year 5s	100	98	100 1/2
Lexington Railway 1st 5s	100	100	100
Georgia & Alabama Con. 5s	100	105 1/2	106 1/2
South Bound 5s	100	105	110

Miscellaneous Bonds.	Par.	Bid.	Asked
G. B. & S. Brewing 1st 3-4s	100	46	46 1/2
G. B. & S. Brewing 2d Income	100	27 1/2	30
United Elec. Light & Power 4 1/2s	100	81 1/2	81 1/2
Consolidated Gas 6s, 1910	100	110	110
Consolidated Gas 5s, 1939	100	109 1/2	109 1/2

### SOUTHERN COTTON MILL STOCKS

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C., for  
Week Ending November 3.

	Par.	Bid.	Asked
Abbeville Cotton Mills (S. C.)	100	70	70
Alken Mfg. Co. (S. C.)	100	90	90
Anderson Cotton Mills (S. C.)	100	123	126
Arkwright Mills (S. C.)	100	105	105
Augusta Factory (Ga.)	100	64	64
Avondale Mills (Ala.)	100	90	95
Belton Mills (S. C.)	100	101	101
Bibb Mfg. Co. (Ga.)	100	108 1/2	108 1/2
Brandon Mills (S. C.)	100	101	101
Buffalo Cotton Mills (S. C.)	100	101	104 1/2
Buffalo Cot. Mills (S. C.) 1st Pfd.	100	98	98
Cabarrus Cotton Mills (N. C.)	100	122	122
Chilquino Mfg. Co. (S. C.)	100	95	95
Clifton Mfg. Co. (S. C.)	100	103	103
Clinton Cotton Mills (S. C.)	100	135	135
Courtenay Mfg. Co. (S. C.)	100	125	127
Columbus Mfg. Co. (Ga.)	100	95	95
Dallas Mfg. Co. (Ala.)	100	85	85
Darlington Mfg. Co. (S. C.)	100	91	91
Eagle & Phenix Mills (Ga.)	100	100	100
Easley Cotton Mills (S. C.)	100	100	100
Enterprise Mfg. Co. (S. C.)	100	100	100
Exposition Cotton Mills (Ga.)	100	150	150
Galley Mfg. Co. (S. C.)	100	97	97
Granby Cot. Mills (S. C.) 1st Pfd.	100	98 1/2	98 1/2
Graniteville Mfg. Co. (S. C.)	100	155	155
Greenwood Cotton Mills (S. C.)	100	99	102
Grendel Mills (S. C.)	100	105	105
Henrietta Mills (N. C.)	100	195	200
King, John P., Mfg. Co. (S. C.)	100	88	88
Lancaster Cotton Mills (S. C.)	100	110	110
Lancaster Cot. Mills (S. C.) Pfd.	100	100	100
Langley Mfg. Co. (S. C.)	100	85	90
Laurens Cotton Mills (S. C.)	100	105	105
Lockhart Mills (S. C.)	100	100	100
Louise Mills (N. C.)	100	95	95
Louise Mills (N. C.) Pfd.	100	102	102
Marlboro Cotton Mills (S. C.)	100	107	107
Manchester Cotton Mills (S. C.)	100	90	90
Mills Mfg. Co. (S. C.)	100	100	100
Mills Mfg. Co. (S. C.) Pfd.	100	100	100
Monaghan Mills (S. C.)	100	100	103
Newberry Cotton Mills (S. C.)	100	120	120
Norris Cotton Mills (S. C.)	100	108 1/2	108 1/2
Odel Mfg. Co. (N. C.)	100	98	102
Orangeburg Mfg. Co. (S. C.) Pfd.	100	103	103
Orr Cotton Mills (S. C.)	100	102	102
Paclet Mfg. Co. (S. C.)	100	105	105
Pelzer Mfg. Co. (S. C.)	100	155	175
Piedmont Mfg. Co. (S. C.)	100	200	200
Richland Cotton Mills (S. C.) Pfd.	100	98 1/2	98 1/2
Roanoke Mills (N. C.)	100	99	99
Saxon Mills (S. C.)	100	103	103
Sibley Mfg. Co. (Ga.)	100	60	66
Southern Cotton Mills (N. C.)	100	95	95
Spartan Mills (S. C.)	100	135	140
Tifton Mfg. Co. (Ga.)	100	125	150
Tucuman Mills (S. C.)	100	140	140
Union Cotton Mills (S. C.) Pfd.	100	103 1/2	103 1/2
Victor Mfg. Co. (S. C.)	100	130	130
Warren Mfg. Co. (S. C.)	100	102	102
Warren Mfg. Co. (S. C.) Pfd.	100	106	106
Washington Mills (Va.)	100	15	20
Washington Mills (Va.) Pfd.	100	95	95
Whitney Mfg. Co. (S. C.)	100	115	125
Wilmington Cot. Mills (N. C.) Pfd.	100	100	100
Woodruff Cotton Mills (S. C.)	100	95	97 1/2

### 'Frisco System Report.

The seventh annual report of the St. Louis & San Francisco Railroad Co. for the fiscal year ended June 30 last shows gross earnings from operation (including the Chicago & Eastern Illinois Railroad) of \$32,013,258, of which \$24,289,510 was of the 'Frisco system proper, an increase on it of \$2,668,627 as compared with the next preceding year. The operating expenses were \$20,188,564, of which \$15,875,976 were of the 'Frisco system proper, an increase of \$2,403,506. The net earnings were \$11,824,733, of which \$8,413,533 were of the 'Frisco system proper, an increase of \$265,121. The total net income was \$12,940,895, of which \$9,156,837 was on the 'Frisco proper. The total interest and other charges amounted to \$9,361,468, leaving as surplus applicable to dividends \$3,579,427. After the payment of dividends there was a balance of \$1,896,775, and after appropriations made for new construction and permanent betterments, interest on car-trust notes and charges for depreciation of equipment there was carried to the credit of profit and loss a remaining surplus of \$976,129.

Referring to the 'Frisco system, the report says that the prosperous condition prevailing during the year in the territory tributary to the company's lines con-

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tinues. An average good crop of farm products is assured; the outlook for an increase in coal production is also bright, and a continuation of heavy freight traffic for another year may be expected.

Referring to the opening of new mileage by the Chicago & Eastern Illinois Railroad, the report says that the territory served by the new lines is productive and is being rapidly developed.

The People's Bank of Berkeley, Va., will, it is reported, increase its capital from \$30,000 to \$50,000.

The Panhandle National Bank of Wichita Falls, Texas, has changed its name to the First National Bank.

During the past year the six Southern States—Alabama, Georgia, North Carolina, South Carolina, Tennessee and Virginia—produced more than \$331,000 worth of gold.

The Baltimore & Ohio Railroad Co. has given notice that it will redeem all of the outstanding 5 per cent. bonds of the Schuylkill River East Side Railroad Co. at 110. The loan amounts to \$4,500,000.

[For Additional Financial News, See Pages 38 and 39.]

**Hambleton & Co.**  
BANKERS and BROKERS,  
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Exchanges.  
17 S. Calvert St., BALTIMORE.  
High-grade Investment Bonds, Municipal, Rail-  
way, Industrial.  
Letters of Credit Available Everywhere.

**CONDENSED STATEMENT OF THE  
First National Bank of Richmond, Va.**

RESOURCES.	
Loans and Discounts	\$4,977,890.94
Overdrafts	142.64
Other Stocks and Bonds	17,601.78
Banking House and other Real Estate	67,519.14
Furniture and Fixtures	0.00
U. S. 2 Per Cent. Bonds at par (Market Value \$667,625.00.)	612,500.00
Premium on U. S. Bonds	0.00
Virginia Bonds to Secure U. S. Deposits	396,000.00
Cash and Due from Banks	1,408,812.56
<b>LIABILITIES.</b>	<b>\$6,580,457.76</b>
Capital	\$600,000.00
Surplus and Profits, net	815,742.23
Reserved for Interest	9,696.01
Circulation	679,000.00
Deposits	4,457,219.51
U. S. Bond Account	12,500.00
Virginia Bond Account	396,000.00
	<b>\$6,580,457.76</b>

VIRGINIUS NEWTON, Pres. JNO. M. MILLER, JR., Cash.

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GREENSBORO, N. C.

**Investment Securities.**

Stocks and Bonds bought and sold.  
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Loans negotiated

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For Business Opportunities, Investment Secu-  
rities, Real Estate, Timber, Mines and Indus-  
trial Properties in all parts of the South, cor-  
respond with  
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GEO. B. EDWARDS, President, Charleston, S. C.  
Commercial and Financial Agent. Business  
undertaken in all parts of the world. Satisfactory  
references.

Members Baltimore Stock Exchange.

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Stocks and Bonds Bought and Sold on Commission. Special attention given to Municipal  
and other Investment Loans. Dealers in Foreign Exchange. Drafts on Europe and  
Letters of Credit furnished. Private Wire to New York and Richmond.

**Merchants' & Farmers' Nat. Bank**  
CHARLOTTE, N. C.  
Capital, \$200,000. Surplus and Profits, \$75,000.  
Prompt and intelligent attention to all business  
intrusted to us. Correspondence invited.  
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C. N. Evans, Cash. W. C. Wilkinson, Asst. Cash  
N. Y. Correspondent  
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**Spencer Trask & Co.**  
BANKERS

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Investment Securities.

Members New York Stock Exchange.  
Branch Office, Albany, N. Y.

**Savannah Trust  
Company,**

13 Bay St., East, SAVANNAH, GA.  
Capital, \$500,000.

Executes trusts of every description.  
Accepts deposits and allows interest  
on daily balances.  
Collections promptly handled.

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President. Vice-President.  
WM. V. DAVIS, Secretary and Treasurer.

**JOHN L. WILLIAMS & SONS,**  
BANKERS,  
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Southern Investment Securities  
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Correspondence Invited.

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References by permission:

Central Natl. Bank, Natl. Capital  
Bank and James L. Norris, Patent  
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Raleigh & Augusta 6s,  
South & Western 3-5s,**

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COTTON MILL STOCKS

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**International  
Trust Co.**

Of Maryland,

BALTIMORE.

Capital, \$2,000,000.00  
Surplus and Profits, \$1,550,660.12

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DOUGLAS H. GORDON, President.  
J. WM. MIDDENDORF, Vice-Pres.  
EDWARD H. THOMSON, Sec. and Treas.  
CHAS. D. FENHAGEN, Sec. and Treas.  
WALTER D. FOCKE, Asst. Sec. & Treas.

**Executive Committee:**

SAMUEL C. ROWLAND, Chairman,  
Sec. and Treas. American Lumber Co.;  
Pres. National Bank of Port Deposit, Md.  
SUMMERFIELD BALDWIN, of  
Woodward, Baldwin & Co., Wholesale  
Dry Goods Commission Merchants;  
Director National Exchange Bank.  
RICHARD H. EDMONDS, President and  
Editor Manufacturers' Record.  
J. WM. MIDDENDORF, of J. Wm. Mid-  
dendorf & Co., Bankers & Brokers;  
Vice-Pres. Seaboard Air Line Railway.  
EDWARD H. THOMSON, of E. H. Thom-  
son & Sons, Bankers & Brokers;  
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We respectfully solicit correspondence  
with Banking Institutions and Corpora-  
tions desiring the services of a well  
equipped Trust Company.

**4 % Certificates  
of Deposit.**

Due March 1, 1908.  
Interest payable quarterly.

**Coupon Certificates of \$1000 each.**

The above certificates are engraved,  
in coupon form, issued to bearer, with  
provision for registration of Principal,  
in denominations of \$1000 each, interest  
at four per cent. per annum, payable  
March, June, September and December.  
The holder of these certificates, by  
giving sixty days' notice in writing, can  
obtain payment of principal on any  
interest date.

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**The Continental Trust Co.**

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Capital and Surplus, \$5,340,000.

Interest paid on deposits subject to check.

Largest Capital of Any Bank or Trust Company in the  
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AND

**SAFE DEPOSIT COMPANY.**

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CAPITAL, \$1,000,000

Does a general Trust Company bus-  
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Receives deposits and allows interest  
thereon.

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Vice-Presidents, JAMES H. DOOLEY,  
HENRY L. CABELL,  
Treasurer, LEWIS D. CRENSHAW, Jr.

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*Ropes*



## New Corporations.

A bank has been organized at Biggers, Ark.

It is reported that a new bank is being organized at Abbeville, S. C.

The Bank of Arcadia, O. T., capital \$5000, has been authorized to begin business.

The First State Bank of Texawa, O. T., has been authorized to begin business; capital \$5000.

The Bank of Woosley, Garfield county, Oklahoma, capital \$5000, has been authorized to begin business.

The Bank of Morven, N. C., capital \$10,000, has been chartered. G. A. Martin and others are stockholders.

The Farmers and Merchants' Bank of Sterling, Okla., has been authorized to begin business; capital \$10,000.

The First National Bank at Smithville, Texas, has elected Theodore Smith as cashier, and is to begin business this month.

The Traders' National Bank of Birmingham, Ala., capital \$100,000, has been chartered. W. P. Frye and others are interested.

The Bank of Hydro, Okla., capital \$10,000, has been incorporated by J. C. Fisher, W. H. Henke and Stephen Johannesmeyer.

The Bank of Hartsville, capital \$25,000, has been incorporated at Hartsville, S. C., by J. L. Cooper of Vaughan and A. M. McMahon.

The Winston County Bank has begun business at Louisville, Miss. The officers are James P. McGraw, acting president; John K. Armstrong, manager.

The Clay County Abstract Co. of Henrietta, Texas, capital \$1000, has been incorporated by C. B. Patterson, J. D. Stein and H. B. Patterson, all of Henrietta.

The Union Investment Co. of South McAlester, I. T., with \$25,000 capital, has been incorporated by Richard Henly, A. E. Becker, S. A. Hawk and W. W. Tooker.

The Citizens' Bank of Waverly, Tenn., has organized by electing officers as follows: C. W. Turner, president; A. P. McMurtry, cashier; J. I. Sanders, vice-president.

It is reported that Frank Hawkins, president of the Third National Bank of Atlanta, Ga., and others are interested in a plan to organize a life-insurance company there.

The Hancock County Bank at Sneedville, Tenn., capital \$25,000, will, it is reported, have officers as follows: David A. Green, president, and H. M. Davis, Jr., cashier.

The National Bank of Eldorado, Ark., capital \$25,000, has been approved. The organizers are C. P. McHenry, B. W. Reeves, M. Smith, Mattie C. Wade and William Green.

The Empire National Bank of Clarksburg, W. Va., capital \$250,000, has been authorized to begin business. The officers are V. L. Highland, president; E. B. Deison, cashier.

The First National Bank of New Lewisville, Ark., capital \$25,000, has been approved. The organizers are J. O. Smith, E. S. Woodfin, J. P. Wheat, C. T. Short and J. W. Warren.

The Bank of Blaine, capital \$15,000, has been organized at Blaine, Ky., with H. H. Gambill, president; R. T. Berry, vice-president, and A. S. Conley of Salyersville as cashier.

The Citizens' Bank of Dublin, Ga., capital \$50,000, has been chartered. The incorporators are E. P. Rentz, William Pritchett, J. A. Bencham and J. D. Smith, all of Laurens county.

Directors of the First National Bank of Sour Lake, Texas, will, it is stated, open a private bank at Saratoga, Texas.

George W. Armstrong, president, will make the arrangements.

The First National Bank of Clendenin, W. Va., capital \$25,000, has been approved. The organizers are J. A. Osborne, James Jarrett, George Ort, M. F. Osborne and J. O. Jackson.

The Jonesville Building and Loan Association of Union county, South Carolina, has been chartered; capital \$50,000. The incorporators are J. J. Littlejohn, W. R. Sams and O. S. Barrett.

The Lawton Investment Co. of Lawton, Okla., capital \$50,000, has been incorporated by F. I. Moffatt of Davenport, Iowa; W. F. Moffatt, T. H. Dunn and E. S. Warner of Lawton.

The First National Bank of Greenwood, S. C., has been authorized to begin business. The officers are S. H. McGee, president; N. A. Craig, vice-president, and E. J. Cunningham, cashier.

It is reported that a bank has been organized at Atmore, Ala.; capital \$25,000. The officers are W. W. Lowery, president; J. D. Curtis, vice-president, and M. M. Brooks of Brewton, cashier.

The First National Bank of Marceline, Mo., capital \$25,000, has been approved. The organizers are W. S. Woods, W. G. Lancaster, George Ward, H. B. Early and H. Wilson Pratt.

The First National Bank of Stigler, I. T., capital \$25,000, has been approved. The organizers are Sam Rose, Henryetta, I. T.; J. S. Stigler, I. C. Cole, Chas. C. Sloan, W. B. Hudson and Sol Rose.

The American National Bank of Tishomingo, capital \$25,000, has been approved. The organizers are L. C. Parmenter, Oklahoma City, O. T.; F. R. Holt, G. H. Lynds, E. F. Sparrow and F. P. Johnson.

The Home Loan & Trust Co. of Newberry, S. C., has been chartered; capital \$500,000. The officers are George S. Mower, president; J. E. Norwood, vice-president, and E. H. Aull, secretary and treasurer.

The Citizens' National Bank of Ada, I. T., capital \$50,000, has been approved. The organizers are John P. Crawford, Ada, I. T.; Geo. A. Harrison, J. W. Hays, D. W. Strain, W. G. McKean and Tom D. McKeown.

The First National Bank of Taloga, Okla., has been authorized to begin business with \$25,000 capital. The officers are Jeremiah C. Strang, president; George E. Black, vice-president, and Frank L. Black, cashier.

The American National Bank of Abilene, Texas, capital \$75,000, has organized by electing officers as follows: J. G. Lowden, president; O. W. Steffens and George L. Paxton, vice-presidents; W. J. Thompson, cashier.

The Piedmont State Bank of Piedmont, O. T., has been chartered, with \$10,000 capital. The incorporators are Otto A. Shuttee, Charles L. Engle, George Belamy, H. T. Smith, H. K. Ricker and H. R. Canon of El Reno.

The Bank of Portland of Portland, Tenn., has applied for a charter; capital \$10,000. The incorporators are W. T. McGlothlin, George C. Edwards, John N. Jones, G. P. Bailey and R. Dick Moore, all citizens of Portland.

The organization of a company to conduct an insurance agency is reported from Brookhaven, Miss., by a correspondent of the Manufacturers' Record. The incorporators are E. F. Brennan, A. C. McNair, J. C. Cosnahan, T. C. Hannah, R. W. McNair and others.

The Concord Banking Co. of Concord, Pike county, Georgia, has been chartered, with \$25,000 capital. The incorporators are Charles T. Smith, G. E. Strickland, R. E. Lee, R. A. Mallory, R. C. Matthews, J. W. Strickland of Concord and R. F. Strickland of Griffin.

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American Trust & Banking Co., Atlanta, Ga.  
Other agencies will be established where needed.  
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The Traders' National Bank of Birmingham, Ala., originally organized as the Citizens' National Bank, has been authorized to begin business; capital \$100,000. Those interested are John H. Frye, O. E. Smith, Frank Nelson, Jr., John H. Miller and O. L. Smith.

The Southern Mutual Home & Real Estate Co. has organized at Wilmington, N. C., by electing officers as follows: President, C. C. Brown; vice-president, M. J. Heyer; manager, M. C. Hammond; secretary, T. E. Brown; treasurer, R. H. Pickett; attorney, C. D. Weeks.

The First National Bank of Floydada, Texas, capital \$30,000, has organized by electing officers as follows: L. T. Lester of Canon City, Texas, president; C. Sur-giner of Floydada, vice-president; James B. Posey of Floydada, cashier; Parnin Posey of Floydada, assistant cashier.

The Dallas Consolidated Abstract Co., capital \$50,000, has been organized at Dallas, Texas, with the following officers: E. E. McDaniel, president; F. R. Bowles, vice-president and general manager; J. D. Bowles, secretary and treasurer. C. F. Ewing and J. D. Penry are also directors.

The Empire Investment Co. of Savannah, Ga., authorized capital \$3000 to \$100,000, has filed articles of incorporation. The incorporators are John Schwarz, John F. Tietjen, Edward J. Kennedy, George B. Whitley, Adam Kessel, Charles S. O'Connell, Allen Sweet, Charles Marks and Jefferson A. Powell; attorney, George B. Whitley.

The Bank of Biggers has been incorporated at Biggers, Ark., with \$25,000 capital, by B. T. Bigger, Tom Bigger, George Bigger, C. S. Marsh, E. C. Whittington, W. A. Krumminger, S. C. Tyler, F. M. Young, H. J. Warshawski, J. A. L. Luttrell, J. H. Luttrell, C. D. Jones, A. J. Witt, D. Blackburn, D. W. Blount, H. R. King, A. R. McCann, A. E. Grier, Ben S. Tipton, J. J. Johnson, E. G. Shoonover, P. M. Shaver, W. A. Vandover and others.

The Citizens' Bank of Cairo, Ga., capital \$25,000, has applied for a charter. The incorporators are L. B. Powell, F. M. Brannon, R. L. Van Landingham, W. C. Mathews, J. C. Mathews, D. F. Oliver, Maxey Paulk, M. G. Cameron, James L. Mauldin, J. W. Booth, Z. F. Booth, S. B. Singletary, Casper Walker, W. T. Merritt, M. L. Wight, K. P. Wight, W. S. Wight, J. C. Chason, W. G. Lewis, T. W. Faircloth, W. H. Brandon and P. H. Herring.

The Alexandria National Bank of Alexandria, Va., has organized by electing officers as follows: Judge C. E. Nicol of Manassas, president; W. B. Smith of Alexandria, first vice-president; S. Russell Smith of Culpeper, second vice-president, and H. A. Thompson of Leesburg, third vice-president. The cashier will be Thomas Smith of Culpeper. The directors are the above-named gentlemen, together with Messrs. S. J. Johnston of Leesburg, E. L. Cockerell of Washington, D. C.; E. B. White of Leesburg, George R. Hill, John A. Marshall, W. A. Smoot, Jr., Henry F. Robertson and Walter Roberts of Alexandria and several others.

#### New Securities.

Corinth, Miss.—Corinth is offering for sale \$55,000 of 5 per cent. bonds.

Plano, Texas.—Plano has issued \$3000 of 4 per cent. 40-year school bonds.

Clinton, Tenn.—Anderson county proposes to issue \$100,000 of good-roads bonds.

Belton, Texas.—The attorney-general has approved \$7000 of Belton school bonds.

Paris, Texas.—The city is receiving

bids for \$55,000 of 5 per cent. water-works bonds. T. S. Hill is mayor.

Dallas, Texas.—The State board of education has purchased \$15,000 of Dallas county 4 per cent. courthouse bonds.

Magnolia, Miss.—The town of Magnolia will sell \$1000 of 6 per cent. bridge bonds in denominations of \$100 each.

Belzona, Miss.—At a special election it has been decided to issue \$20,000 of water-works and electric-light bonds.

Grafton, W. Va.—The school board has sold \$55,000 of school bonds to Farson, Leach & Co. of Chicago and New York.

Knoxville, Tenn.—The Knoxville & Ohio Railroad Co. has issued \$3,000,000 of bonds for refunding and other purposes.

Little Rock, Ark.—The Little Rock Railway & Electric Co. has filed a mortgage to secure \$2,000,000 of 5 per cent. 30-year first-mortgage bonds.

Lexington, Ky.—Seasongood & Mayer of Cincinnati have purchased \$38,000 of Woodland Park bonds from the city at a premium of about 1 per cent.

Huntington, Tenn.—The voters of Huntington have decided to issue \$6000 of bonds for the purchase of the Southern Normal University property.

Newport News, Va.—Denison, Prior & Co. of Boston and Cleveland were the highest bidders for \$56,000 of 4½ per cent. bonds, their bid being \$56,800.

Sherman, Texas.—The city council has decided to issue \$35,000 of 5 per cent. bonds to refund the balance unpaid of the Texas & Pacific Railway bond subsidy.

Hickory, N. C.—The Thornton Light & Power Co., Marcellus E. Thornton, president, is offering \$15,000 of 20-year 5 per cent. bonds, which, it is said, are based on an exclusive franchise.

Salisbury, N. C.—The board of Aldermen has declined all bids for the \$90,000 issue of bonds, the highest received being by J. W. Hayes & Sons of Cleveland, Ohio, at par, less 1 per cent. for expenses.

#### Financial Notes.

The Memphis Hospital Medical College of Memphis, Tenn., has given notice that it will redeem ten bonds immediately.

The Guaranty Loan & Banking Co. of Tyler, Texas, has increased its capital from \$2000 to \$2500.

The Enterprise Building and Loan Association of Newport, Ky., has filed amended articles of incorporation, increasing its capital from \$150,000 to \$550,000.

Messrs. Fisk & Robinson of New York and Boston in their monthly bulletin of investments report that there was a better demand during October for high-grade railroad bonds.

The Gulf Coast Resorts, Mobile, New Orleans, Mexico and California via Southern Railway.

Winter tourist tickets now on sale to the noted resorts of the Gulf coast and Mexico and California. Tickets on sale via Southern Railway up to and including April 30, 1904, limited to May 31, 1904, for return passage.

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Accounts of Banks, Bankers, Corporations and Individuals solicited. We invite correspondence.

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at a very attractive figure of 20 year 3½ coupon, semi-annual, May and November, may be had by addressing for particulars, if at once, through M. E. Thornton, Box 221, Hickory, N. C. The franchise on which they are based is exclusive and the amount already invested is \$32,400.

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OFFICE CITY WATER WORKS, Richmond, Va., Nov. 2, 1903.—Sealed proposals will be received at this office until Monday, November 16th, at 5 P. M., for Buildings and Machinery, as follows: One Annex Building and one Small House, both to be of granite; Hydraulic, Steam and Electric Machinery of 200 horse-power, and two Electric-Motor Pumps, each of 1000 gallons per minute. Plans, specifications and full information may be obtained at this office. Proposals for the whole or any part are to be accompanied with a certified check of \$500. The Committee on Water reserve the right to reject any or all bids. CHAS. E. BOLLING, Superintendent.

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Baird Machinery Co.	49	Baird Machinery Co.	49	Baird Machinery Co.	49	Baird Machinery Co.	49
Baker, H. C., & Co.	44	Baker, H. C., & Co.	44	Baker, H. C., & Co.	44	Baker, H. C., & Co.	44
Baker, Stillwell & Hart.	43	Baker, Stillwell & Hart.	43	Baker, Stillwell & Hart.	43	Baker, Stillwell & Hart.	43
Baldwin Locomotive Works.	13	Baldwin Locomotive Works.	13	Baldwin Locomotive Works.	13	Baldwin Locomotive Works.	13
Ball Engine Co.	18	Ball Engine Co.	18	Ball Engine Co.	18	Ball Engine Co.	18
Ball & Wood Co.	30	Ball & Wood Co.	30	Ball & Wood Co.	30	Ball & Wood Co.	30
Baltimore Belting Co.	31	Baltimore Belting Co.	31	Baltimore Belting Co.	31	Baltimore Belting Co.	31
Baltimore Engine Co.	17	Baltimore Engine Co.	17	Baltimore Engine Co.	17	Baltimore Engine Co.	17
Baito. Fidelity Warehouse Co.	23	Baito. Fidelity Warehouse Co.	23	Baito. Fidelity Warehouse Co.	23	Baito. Fidelity Warehouse Co.	23
Baltimore-Maryland Engrav. Co.	70	Baltimore-Maryland Engrav. Co.	70	Baltimore-Maryland Engrav. Co.	70	Baltimore-Maryland Engrav. Co.	70
Balt. Shipbldg. & Dry Dock Co.	72	Balt. Shipbldg. & Dry Dock Co.	72	Balt. Shipbldg. & Dry Dock Co.	72	Balt. Shipbldg. & Dry Dock Co.	72
Baltimore Steam Packet Co.	73	Baltimore Steam Packet Co.	73	Baltimore Steam Packet Co.	73	Baltimore Steam Packet Co.	73
Barnes, W. F., & John, Co.	9	Barnes, W. F., & John, Co.	9	Barnes, W. F., & John, Co.	9	Barnes, W. F., & John, Co.	9
Barnett, G. & H., Co.	76	Barnett, G. & H., Co.	76	Barnett, G. & H., Co.	76	Barnett, G. & H., Co.	76
Barr & Glan.	46	Barr & Glan.	46	Barr & Glan.	46	Barr & Glan.	46
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Barrett Mfg. Co.	36, 60	Barrett Mfg. Co.	36, 60	Barrett Mfg. Co.	36, 60	Barrett Mfg. Co.	36, 60
Barrett, C. O., & Snow Co.	26	Barrett, C. O., & Snow Co.	26	Barrett, C. O., & Snow Co.	26	Barrett, C. O., & Snow Co.	26
Bates, James, Sons.	26	Bates, James, Sons.	26	Bates, James, Sons.	26	Bates, James, Sons.	26
Bates Machine Co.	18	Bates Machine Co.	18	Bates Machine Co.	18	Bates Machine Co.	18
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Benbow Co.	75	Benbow Co.	75	Benbow Co.	75	Benbow Co.	75
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Bertsch & Co.	48	Bertsch & Co.	48	Bertsch & Co.	48	Bertsch & Co.	48
Bickford Drill & Tool Co.	49	Bickford Drill & Tool Co.	49	Bickford Drill & Tool Co.	49	Bickford Drill & Tool Co.	49
Big Brushy Coal & Coke Co.	32	Big Brushy Coal & Coke Co.	32	Big Brushy Coal & Coke Co.	32	Big Brushy Coal & Coke Co.	32
"Big Four"	3	"Big Four"	3	"Big Four"	3	"Big Four"	3
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Bird, J. A. & W., & Co.	63	Bird, J. A. & W., & Co.	63	Bird, J. A. & W., & Co.	63	Bird, J. A. & W., & Co.	63
Bird, Wm. M., & Co.	48	Bird, Wm. M., & Co.	48	Bird, Wm. M., & Co.	48	Bird, Wm. M., & Co.	48
Birmingham Rail & Loc. Co.	48	Birmingham Rail & Loc. Co.	48	Birmingham Rail & Loc. Co.	48	Birmingham Rail & Loc. Co.	48
Blakely, A. B., & Co., Ltd.	1	Blakely, A. B., & Co., Ltd.	1	Blakely, A. B., & Co., Ltd.	1	Blakely, A. B., & Co., Ltd.	1
Blakeslee Mfg. Co.	17	Blakeslee Mfg. Co.	17	Blakeslee Mfg. Co.	17	Blakeslee Mfg. Co.	17
Blonds, V. G.	49	Blonds, V. G.	49	Blonds, V. G.	49	Blonds, V. G.	49
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Boston & Maine Railroad.	1	Boston & Maine Railroad.	1	Boston & Maine Railroad.	1	Boston & Maine Railroad.	1
Boston Belting Co.	31	Boston Belting Co.	31	Boston Belting Co.	31	Boston Belting Co.	31
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Broderick & Bascom Rope Co.	57	Broderick & Bascom Rope Co.	57	Broderick & Bascom Rope Co.	57	Broderick & Bascom Rope Co.	57
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Brownell, The, & Co.	18	Brownell, The, & Co.	18	Brownell, The, & Co.	18	Brownell, The, & Co.	18
Buchanan-Foster Co.	63	Buchanan-Foster Co.	63	Buchanan-Foster Co.	63	Buchanan-Foster Co.	63
Buckeye Iron & Brass Works.	65	Buckeye Iron & Brass Works.	65	Buckeye Iron & Brass Works.	65	Buckeye Iron & Brass Works.	65
Buckingham, Paulson & Co.	39	Buckingham, Paulson & Co.	39	Buckingham, Paulson & Co.	39	Buckingham, Paulson & Co.	39
Buffalo Wire Works Co.	57	Buffalo Wire Works Co.	57	Buffalo Wire Works Co.	57	Buffalo Wire Works Co.	57
Burrows Co., E. T.	58	Burrows Co., E. T.	58	Burrows Co., E. T.	58	Burrows Co., E. T.	58
Burt Mfg. Co.	3	Burt Mfg. Co.	3	Burt Mfg. Co.	3	Burt Mfg. Co.	3
Burton Vener Co.	53	Burton Vener Co.	53	Burton Vener Co.	53	Burton Vener Co.	53
Bushnell, G. H., Press Co.	67	Bushnell, G. H., Press Co.	67	Bushnell, G. H., Press Co.	67	Bushnell, G. H., Press Co.	67
Byers, John F., Machine Co.	30	Byers, John F., Machine Co.	30	Byers, John F., Machine Co.	30	Byers, John F., Machine Co.	30
Caine & Plitt.	45	Caine & Plitt.	45	Caine & Plitt.	45	Caine & Plitt.	45
Caldwell, H. W., & Son Co.	4	Caldwell, H. W., & Son Co.	4	Caldwell, H. W., & Son Co.	4	Caldwell, H. W., & Son Co.	4
Caldwell, W. E., Co.	15	Caldwell, W. E., Co.	15	Caldwell, W. E., Co.	15	Caldwell, W. E., Co.	15
Cameron, A. S., S. Pump Wks.	70	Cameron, A. S., S. Pump Wks.	70	Cameron, A. S., S. Pump Wks.	70	Cameron, A. S., S. Pump Wks.	70
Cameron & Barkley Co., The.	68	Cameron & Barkley Co., The.	68	Cameron & Barkley Co., The.	68	Cameron & Barkley Co., The.	68
Campbell & Clute Machine Co.	66	Campbell & Clute Machine Co.	66	Campbell & Clute Machine Co.	66	Campbell & Clute Machine Co.	66
Capitol City Art Glass Works.	7	Capitol City Art Glass Works.	7	Capitol City Art Glass Works.	7	Capitol City Art Glass Works.	7
Carbondale Chemical Co.	23	Carbondale Chemical Co.	23	Carbondale Chemical Co.	23	Carbondale Chemical Co.	23
Carborundum Co.	63	Carborundum Co.	63	Carborundum Co.	63	Carborundum Co.	63
Cardwell Machine Co.	67	Cardwell Machine Co.	67	Cardwell Machine Co.	67	Cardwell Machine Co.	67
Carey, George H.	46	Carey, George H.	46	Carey, George H.	46	Carey, George H.	46

PROPOSALS.

**TREASURY DEPARTMENT**, office of the Supervising Architect, Washington, D. C., October 21, 1903.—Sealed Proposals will be received at this office until 3 o'clock P. M. on the 17th day of November, 1903, and then opened, for the low pressure steam heating apparatus, complete in place, for the U. S. Post Office at Lockport, N. Y., in accordance with drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Lockport, N. Y., at the discretion of the Supervising Architect. **JAMES KNOX TAYLOR**, Supervising Architect.

**GALVESTON, TEXAS**, Oct. 7, 1903.—Sealed PROPOSALS, in duplicate, for grade raising at Galveston, Texas, involving over 11,000,000 cubic yards of filling, will be received by the Chairman of the Grade Raising Board, until 2 P. M., December 7, 1903, and then publicly opened. For information apply to **E. R. CHEESBOROUGH**, Secretary Grade Raising Board, Galveston, Texas.  
**C. S. RICKE**, Consulting Engineer.

**FORT MYER, VA.**, October 23d, 1903.—Sealed proposals, in triplicate, for constructing Blacksmith Shop, Guardhouse and Extension to Riding Hall, will be received until 10 A. M. November 21, 1903. The U. S. reserves right to reject any or all bids or any part thereof. Information on application. Envelopes containing bids should be endorsed "Proposals for Buildings," addressed **CAPT. W. F. CLARK**, Q. M.

**Bids for Construction of Water Works.**

Sealed bids will be received till 2 o'clock P. M. Tuesday, November 10, 1903, for furnishing all material, machinery, etc., constructing, excavating, building engine house, steel tank and laying pipe, making all attachments thereto, raising steam and putting the system in good first-class working order by the first day of March, 1904. Payment to be made in \$-20 Improvements Bonds of the City of Mena, Arkansas, at par. Plans, specifications and other particulars can be had upon application to **W. M. PIPKIN**, Mena, Ark. The Improvement Board reserves the right to reject any or all bids. Address all proposals and bids to **W. M. PIPKIN**, Pres. Imp. Board, Mena, Ark.

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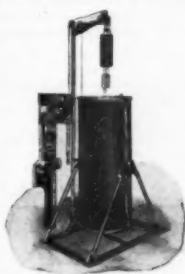
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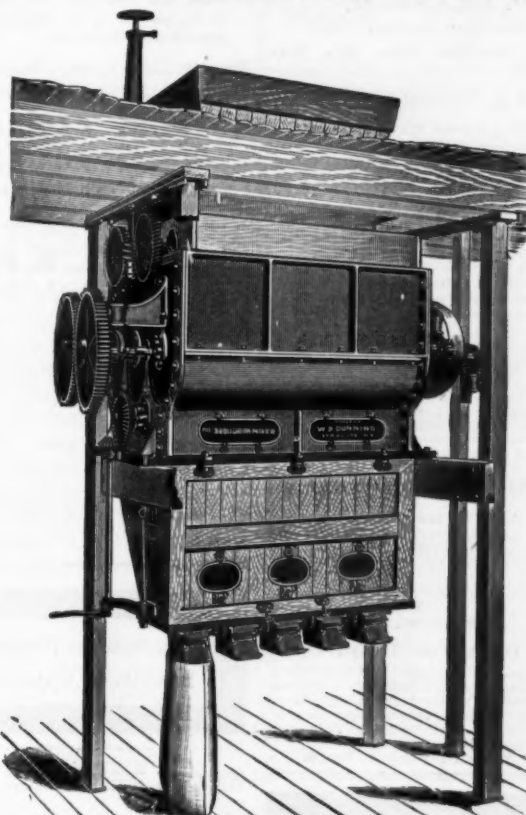
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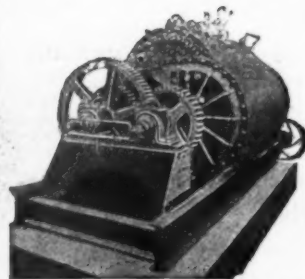
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### WICKES BROS.

**95 Liberty Street, NEW YORK CITY.**

### FOR SALE.

Two 156 horse-power Second-Hand Babcock & Wilcox Water Tube Boilers.

### OIL WELL SUPPLY CO.

Twenty-first Street and A. V. Railway,  
**PITTSBURGH, PA.**

### Otto GAS ENGINE for Sale.

85 to 90 indicated H. P.; diameter of cylinder, 18 1/2 inches; stroke, 24 inches; single acting; weight about 12 tons; two fly wheels, each having 3 grooves for 1 1/2-inch rope.

**MORGAN SPRING CO.,**  
**WORCESTER, MASS.**

## You Should Only Buy One Piano in a Lifetime,

and if would interest yourself enough to see the

## Stieff Piano

you would find in it an instrument that would more than realize your ideals.

**Only One Grade and an Honest Price.**

**PAY** Cash or Monthly

and in short time you will own a **High Grade Piano, fully guaranteed.** Other Pianos, used and new.

Uprights.....\$100, \$150 up.  
Squares..... \$25 up.

**STIEFF, 9 N. Liberty St.**  
**BALTIMORE, MD.**

One 14  
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One 11  
One 10  
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One 8  
One 7  
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# Bargains in Machinery FOR IMMEDIATE DELIVERY.

## BOILERS.

- 1 250 H. P. Babcock & Wilcox, 150 lbs. pressure.  
 1 250 H. P. and 200 H. P. Heine, 150 lbs. pressure.  
 1 257 H. P. Abendroth & Root, 150 lbs. pressure.  
 1 175 H. P. Locomotive type, 150 lbs. pressure.  
 1 150 and 125 H. P. Locomotive type, 150 lbs. press.  
 3 return tubulars, 72"x17", 100 lbs. pressure.  
 1 return tubular, 66"x15", 100 lbs. pressure.  
 2 return tubulars, 66"x17", 115 lbs. pressure.  
 2 return tubulars, 42"x14", 100 lbs. pressure.

## ENGINES.

- 1 17x12 Brown, cut-off, 100 r. p. m.  
 1 22x18 Hewes & Phillips Corliss.  
 1 20x18 Harris Corliss, practically new.  
 1 14x28 Delamater Corliss type.  
 1 18x21 Buckeye, tangye bed, 125 h. p.  
 1 18x24 Atlas automatic.  
 1 16x24 Atlas automatic.  
 1 9x8 Climax automatic.  
 1 16x30x18 Hamilton, tandem.  
 1 13 and 20 1/2 x15 Armstrong & Sims, c. c.  
 1 13x19x15 McIntosh & Seymour, tandem.  
 1 11x17x14 Harrisburg, tandem.

## STEAM SHOVELS.

- 1 Vulcan, Giant B. No. 100, Crane type, standard gauge, 1 1/2 yard dipper, with engines and boilers.  
 2 Souther, Otis type, one standard gauge, and one wide gauge, 1 1/2 yard dipper, complete with engines and boilers.

## COMPRESSORS.

- 1 24 and 24x30 Rand Straightline type C, steam driven, 1320 ft. free air.  
 1 12 and 14 1/2 x14 Ingersoll-Sergeant.

## THOMPSON SON & CO.

114-118 Liberty St. NEW YORK CITY.

## FOR SALE.

- BOILERS**—80 h. p. Hor. Tubular.....\$240  
 250 " Watertube ..... 440  
**ENGINES**—30 " McIntosh & Seymour 150  
 15 " Gas Engine, "Otto"..... 180  
 60 " Westinghouse..... 280  
 125 " N. Y. Safety..... 680  
 175 " Corliss..... 980  
**DYNAMOS**—120 lights Edison..... 138  
 180 " Onondaga ..... 135  
 200 " Mathew..... 150  
 270 " Edison..... 190  
 510 " Edison..... 298  
 1000 " Edison..... 540

American Electric Supply & Mfg. Co.  
 27 Thames St., New York City.

## MENGEL'S MACHINERY EXCHANGE

15 H. P. Geyser Portable Boiler and Engine on wheels. 35 H. P. Portable Duvall on skids. 10 H. P. Baxter Engine and Boiler combined. 55 H. P. White & Middleton Gas or Gasoline Engine, 12" by 36". 60 H. P. Hamilton-Corliss Engine, directly connected to 25-ton Linde Ice Machine. 5 and 10-ton Vertical Compressors. 4 25 and 35 H. P. Horizontal Engines. Sharp's Collar and Cuff Ironer. Band Starcher and Ironer. 50 gal. Copper Starch Kettle. 60-light Dynamo. 25 110 volt Manhattan Arc Lights. Cylinder and Job Printing Presses. Paper Cutters. Complete Plants and Machinery of all kinds Bought, Sold and Exchanged. Nearly new 25 H. P. White & Middleton Marine Gasoline Engine.

Mengel's Mach'y Exchange, 12 E. Lombard St., Baltimore Md.

## Second-Hand Engines and Boilers for Sale Cheap.

- One 14x20 plain slide valve, side crank engine.  
 One 12x20 plain slide valve, side crank engine.  
 One 11x16 Erie Automatic Engine.  
 One 60-horsepower Junior Westinghouse Automatic Engine, cylinders 9 1/2-inch bore.  
 One 14x36 Sioux Corliss Engine, right hand.  
 One 54-inch by 14-inch tubular boiler.  
 One Stillwell Heater. All the above in first-class repair and can make immediate delivery.  
 Address

FISHER MACHINE WORKS CO.  
 LEAVENWORTH, KANSAS.

## FOR SALE.

Fifty Whitin Welman Top Flat Cards, with 40 tops 40 ins. wide. Cylinder 42 x40 ins. Doffer 40x18 ins. Floor space 8 ft. 2 ins. x5 ft. 2 ins., with collers. Production 125 lbs. per day. Some of these cards are only 3 years old, balance 8 years. They can be seen running. Also 150 sets Steel Clothing in extra good condition; 100 Doffers; 150 Mason Looms, 44"; 10 Ashworth Revolving Top Cards. For full information and price apply to

WM. J. DUNN,  
 Fall River, Mass

Second-hand Dynamos, Motors and Electrical Appliances. All money saved. Repair anything. Have you a Dynamo or Motor for sale?

GUARANTEE ELECTRIC CO.  
 134-139 N. Clinton St. CHICAGO

## ENGINES—Compound.

- 1 14 and 25x16 Ball & Wood, self-contained.  
 1 14 and 23x16 Tandem Ames.  
 2 13 and 23x18 Tandem Williams.  
 1 13 and 20 1/2 x15 Cross Armstrong & Sims.  
 1 13 and 19x15 Tandem McIntosh & Seymour.  
 1 12 and 21x16 Cross Erie Ball.  
 1 18 and 30x16 Westinghouse.  
 1 16 and 27x16 Westinghouse.  
 1 14 and 24x14 Westinghouse.  
 1 13 and 22x13 Westinghouse.

## Simple.

- 1 18 1/2 x18 Armstrong & Sims.  
 1 16x16 Ball & Wood.  
 1 15 1/2 x24 Buckeye Tangye frame.  
 1 14 1/2 x24 Buckeye Tangye frame.  
 1 14x16 New York Safety Power Co.  
 2 13x18 Harrisburg Ideal.  
 1 11x12 McIntosh & Seymour.  
 1 9 1/2 x10 Armstrong & Sims.

## BOILERS.

- 1 350 H. P. Franklin Water Tube, 140 lbs.  
 2 66x16 Return Tubular.  
 2 54x16 Return Tubular.

## Rossiter, MacGovern & Co., (Inc.)

17 Battery Place, New York City, N. Y.  
 BRANCH OFFICES:  
 84 State St., BOSTON, MASS.  
 Missouri Trust Bldg., ST. LOUIS, MO.

## A SMALL AMOUNT

will buy

## Pulverizing Machinery

Cement, Barytes, Talk, Foundry Facing, Etc.

We have three Cylindrical Pulverizers or Pebble Mills, made by the West Pulverizing Machine Co. These Mills will reduce your material cheaply and quickly.

## They are New and Complete

With all parts.

## FOR SALE BY

BAKER, STILLWELL and HART,  
 Birmingham, Ala.

## FOR SALE.

## Davis Calyx Drill,

Class F, with appurtenances and 10 H. P. locomotive type Boiler on wheels, to run drill.

This drill is used for exploiting for minerals and for driven wells, and is very complete in all its appurtenances. It has been in use about ten months with best of care, and was new when purchased. Its capacity is guaranteed for 600 feet, but will bore deeper with sufficient drill rods. It cuts a 4 1/2" hole and 3" core; 300 feet of drill rods, 131 feet of 5" extra black pipe for casing. Drive head and shoe. Cost complete over \$1800. Will sell for \$900 f. o. b. cars Sylva, N. C.

R. L. MURRAY, Waynesville, N. C.

## FOR SALE.

- One 70 Ton Bucyrus Shovel, brand new.  
 One 1 1/2 yd. Bucyrus Shovel, first-class condition.  
 The above two shovels, Chicago delivery.  
 One (AA) Marion Shovel, 2 1/2 yard bucket.  
 2 yard bucket Vulcan Shovel.  
 1 1/2 bucket, Vulcan shovel.  
 One Standard Gauge Shay Locomotive, 20 ton, first-class condition.  
 The above three shovels and locomotive, Pennsylvania delivery.  
 Three brand new 9x14, 36 inch Gage Locomotives, and one 9x14 Porter. Just out of the shops, first-class condition, Chicago delivery.

Jno. T. Briscoil & Co.  
 13 McCormick Block, CHICAGO, ILL.

## FOR SALE.

Several Hundred Tons of  
 1/4 inch  
**Open-Hearth Tank Plate**  
 63 x 156-inch.

E. KEELER CO., Williamsport, Pa.

## For Sale—Fertilizer Factory.

Located on the St. John's River, at Jacksonville, Fla. This property can be bought very cheaply, and experts say that with a small outlay of cash its capacity can be doubled. For information and terms apply to

WILLIAM W. GORDON, Jr.  
 Attorney for A. Cosmo Little, SAVANNAH, GA.

# For Sale

## At a Sacrifice.

One 1 1/2 yd. Bucyrus Steam

Shovel in good condition.

One 10"x16" Hoagland Rock

Crusher.

For detailed information, and specifications, address

# The Cameron & Barkley Co.

Charleston, S. C.

## FOR SALE.

- 2 25 H. P. and 2 50 H. P. balanced valve centre crank engines.  
 1 12 H. P. and 2 15 H. P. locomotive boilers and engines on wheels.  
 1 15 H. P. Peerless traction engine.  
 1 10 H. P. locomotive boiler on wheels.  
 1 90 H. P. locomotive boiler.  
 2 New Era graders, with 25 H. P. traction engines.  
 Earth handling machinery, dump cars, railway, mining and contractors' equipment of every description.  
 If you want to buy or sell contractors' plant of any description, we can help you. Correspondence solicited.

## CONTRACTORS EQUIPMENT CO.

Betz Building, Philadelphia, Pa.

## FOR SALE.

## Five Blowing Engines.

36" Steam Cylinder, 84" Air Cylinder, 54" Stroke.  
 Engines were built by Cuyahoga Engine Works and can be seen in operation at our plant at Columbus, Ohio. Can be delivered about Jan. 1st.

The Columbus Iron & Steel Co.  
 COLUMBUS, OHIO.

## BARGAINS—CHEAP.

One Deane Duplex Comp. Pump, 14x26x11x18.  
 One 30x13 Blake Pattern Crusher, nearly new.  
 Three Hoisting Engines. Rails, Locomotives.

## L. E. KENNEDY & CO.

17 Broadway, New York City.

## Do These Interest You?

- 1 20x30 Horizontal Engine, \$800.  
 1 8 1/2 x10 Single Drum Mining Engine, \$400.  
 Other Hoisters, \$150 up.  
 Boilers, 36x16—42x18.

## CONTRACTORS SUPPLY CO.

Park Building, PITTSBURGH, PA.

## FOR SALE.

75 K. W. direct connected set.  
 115 volts, excellent condition,

J. C. M. LUCAS,

22 Light Street, BALTIMORE.

# FOR SALE.

## Immediate Delivery.

## AIR COMPRESSORS.

- Two Rand Straight Line, "Class C," 18"x18"x34".  
 One Ingersoll-Sergeant, Class "G," Duplex, 20"x20"x22".  
 One Norwalk (2 stage) 14"x14"x9 1/2"x16".  
 Two Rand Duplex (3 stage) 16"x14"x8 1/2"x4 1/2"x22".  
 One Rand Duplex Corliss, 20"x20"x36".

## BOILERS.

- Four Babcock & Wilcox Water Tube, 208 h. p. each, shaking grates.  
 Eight Horizontal Return Tubular, 66"x16".  
 Three Horizontal Return Tubular, 72"x16".  
 Four Horizontal Return Tubular, 72"x16".  
 Three Horizontal Return Tubular, 66"x16".  
 Nine Horizontal Return Tubular, 72"x18".

## ENGINE.

- One 20"x40" Buckeye, girder frame, band wheel in half, 12"x31" face.

## LOCOMOTIVES.

- 36" gauge Locomotives.  
 Four H. K. Porter 9"x14", saddle tank.  
 Two Vulcan 9"x14", saddle tank, built 1900.

## RAILS.

- 200 tons 30-lb. steel relayers.  
 200 tons 35-lb. steel relayers.  
 500 tons 56-lb. steel relayers.

## CARS.

- Eighty 80,000-lb. Ore Hopper Cars, made by Allison Mfg. Co.

## PUMP.

- 1 Worthington Compound Duplex Condensing Pump, 25"x43"x17 1/2"x36", 20" suction and 18" discharge. Capacity, 3,000,000 gallons.  
 All of the above in A-1 order and ready for immediate delivery.  
 We buy and sell Air Compressors, Engines, Locomotives, Rails, Cars, Bridges, Boilers, Hoisting Engines and Pumps, etc. Complete plants purchased.

## BOILER STACK.

- 1000 feet of 34" Boiler Stack, 5-16" material. This stack is first-class in every respect and will be sold at a bargain.

## CYLINDER BOILERS.

- 8 Boilers, 40" long x 34" diam., good for 100 lbs. steam pressure, without fixtures or fittings. For quick sale will be sold cheap.

## A. V. KAISER & CO.

222 South Third St., PHILADELPHIA, PA.

# FOR SALE.

## Boilers.

- Two 70 H. P. Hor. Return Tubular. Two 65 H. P. Locomotive. One 25 H. P. Locomotive. One 25 H. P. Vertical. One 20 H. P. Vertical. One 10 H. P. Vertical.

## Engines.

- One 7x8 Vertical. One 10x12 Horizontal. One 12x24 Horizontal. One 12x28 Horizontal. One 14x24 Horizontal. One 18x24 Horizontal. One 10x14 "Buckeye" Automatic. One 13x15 "Ide" Automatic. One 15x18 "Ide" Automatic. Two 10x12 "Ball" Automatic.  
 Also a lot of Pumps, Hoisting Engines, Motors, Rails, Pipe, Wood Working Machinery, Shafting, Hangers, Wood and Iron Pulleys.

## ALL AT BARGAINS.

Huntington Machinery & Supply Co.  
 WILKES-BARRE, PA.

## FLOUR MILL MACHINERY.

### ROLLER MILLS—Double Stands.

- One 6x12, three 6x18, three 9x18 Case.  
 One 9x24, one 9x14 Allis.  
 One 9x24 and one 9x30 Todds & Stanley.

## IRON FRAME VERTICAL FRENCH BUHR MILLS.

- Two 30" Harrison, two 20" Sprout, Waldron. Three 18" Richmond, one 14" Sprout, Waldron.

### WOOD FRAME HORIZONTALS.

- One 22" Bradford, and one each, 18", 24", 30" and 36" Straub.  
 Stock constantly changing. Write for what you want.

## STRAUB MACHINERY CO.,

Cincinnati, Ohio.

# BOILERS!

Engines, Machinery in great variety at LOW PRICES.

Correspondence solicited by  
 FIDELITY MACHINE AND METAL COMPANY,  
 1406-22 Washington Ave., Phila.

## Blower Bargains.

Special offer in Roots Second-Hand Blowers, all sizes up to No. 5.

Address H. M. PAPWORTH,

120 Liberty St., New York.



## AN OLD ESTABLISHED MACHINERY AND SUPPLY BUSINESS FOR SALE.

Established more than 30 years ago.

For particulars address  
I. S. F., care Mfrs.' Record, Baltimore.

## LATHES.

No. 72 14"x5' Lodge & Shipley.

No. 73 14"x5' Lodge & Shipley.

No. 49 20"x10' Taper, Lodge & Shipley.

### THE LODGE & SHIPLEY MACHINE TOOL CO.

CINCINNATI, OHIO,

U. S. A.

## FANS.

Central station man's opportunity to increase the day load. We offer for immediate delivery, all f. o. b. Cincinnati, the following 125 cycle fans:

150 G. E. swivel and turn, 12 in., 104 volt., \$5.00 each.

150 Emerson solid, 12 in., 32 volt., \$3 each.

200 Westinghouse solid, 13 in., 52 volt., \$3.50 each.

100 G. E. swivel and turn, 12 in., 32 volt., \$4.00 each.

JOHN A. STEWART ELECTRIC CO.

430 Sycamore St., Cincinnati, Ohio.

## J. W. Cregar Agency

PERMANENT MACHINERY EXHIBIT

The Bourse, Philadelphia

FOR SALE AT BARGAIN PRICES

PLATE PLANNER.

Built by Hilles and Jones Company.

Length over all, 17' 8"; length of plate it will plane, 14' 0"; number of screw clamps, 9"; diameter screw clamps, 1 1/2"; pitch screw clamps, 5 1/2" thds. per inch; diameter feed screws, 3"; pitch feed screws, 1/2"; one tight pulley, 4" face 22" diam.; two loose pulleys, 7" face 22" diam.; counter shaft, 2 1/2-16" diam. x 8' 6" long, with tight and loose pulleys, 30" diam., 5" face and driving pulley, 30" diam., 22" face; weight, approximately, 2500 lbs.; used about 18 months; condition, good.

Price, \$1200.00, f. o. b. Wilmington, Del.

ANGLE SHEAR.

Made by Hilles and Jones Company.

Type, double right and left; used about 18 months; capacity, 5" angle irons; weight, 7,500 lbs.

Price, \$600.00, f. o. b. Wilmington, Del.

One (1) 24-27" American Turret Lathe

Manufacturing Company, 8 E M 1-A UTO-

MATIC turret lathe with two (2) duplex tool

holders and 8 bars, practically as good as new

in every respect. Cost, new, \$1850.00. We

offer it for \$1450.00, f. o. b. Buffalo, N. Y.

We guarantee it strictly in A-1 condition.

## SECOND-HAND TOOLS IN FINE WORKING ORDER.

16x6 Davis & Egan engine lathe, comp. rest, 18"x8" Hendey-Norton engine lathe, comp. rest, 21"x10" Lathe & Morse engine lathe, plain rest, 15" Hendey shaper, 24" Hendey shaper, 30" Prentice Bros. drill press, back geared, power feed, 70" Gang radial drill, 62" Hillis & Jones radial drill, No. 16 Garvin plain milling machine with vertical spindle attach, No. 2 1/2 Garvin Universal milling machine, No. 3 Garvin screw machine, plain head, No. 3 Pratt & Whitney screw machine, geared friction head, No. 4 Warner & Swasey screw machine, friction head, wire feed, collets and tools, 2"x12" Garvin screw machine and tools, 1" automatic screw machine, Pratt & Whitney, 2" automatic screw machine, Pratt & Whitney, No. 1 Diamond universal grinder, 34" Colburn boring and turning mill, with chuck, No. 4 diamond face grinding machine. Underwood portable milling machine.

Photo and description on application

THE GARVIN MACHINE CO.

Spring and Varick Sts., New York.

## FOR SALE. Partial List Second-Hand Machines

12"x5" Pratt & Whitney, rise and fall rest, with taper.  
14"x54" Putnam, rise and fall rest.  
14"x6" Blaisdell, rise and fall rest, with taper.  
15"x6" Poeter, rise and fall rest.  
15"x6" Prentiss, rise and fall rest, with taper.  
16"x8" Pratt & Whitney, rise and fall rest, with taper.  
16"x7" M. K. & C. plain rest.  
16"x18" Fay & Scott, compound rest.  
18"x8" Reed, plain.  
18"x8" Lodge & Davis, compound rest and taper.  
24"x10" No Name, incomplete.  
26"x8" Betts Lathe, compound rest.  
30"x8" Stark, plain.  
36"x14" Betts Lathe, compound rest.  
No. 3 B. & O. Turret.  
No. 14 Garvin Special Forming Turret Lathe.  
14"x8" Lodge & Barker Turret Lathe.  
18"x8" Johnson Turret Lathe.  
18"x8" Lodge & Davis Chucking Lathe.  
Six-Spindle Miles, Bement & Co. Arch Bar Drill.  
26" Bickford Upright Drill.  
20" Barnes Upright Drill.  
Three-Spindle Upright Slatte Sensitive Drill.  
Three-Spindle Garvin Sensitive Drill.  
24"x24" Sellers Planer, one head.  
42"x42"x10" Whitcomb Planer, two heads.  
42"x42"x12" Betts Planer, one head.  
16" Smith & Mills Shaper.  
No. 2 Keyseat Milling Machine.  
No. 3 Garvin Plain Milling Machine.  
No. 1 B. & S. Universal Milling Machine.  
No. 4 1/4 Garvin Plain Miller.  
No. 2 No. 2 Garvin Plain Millers.  
1 No. 4 1/4 Brainard Plain Miller.  
No. 4 Schlenkers Double-Head Bolt Cutter.  
3" Pratt & Whitney Outing-Off Machine.  
3" Lowell Machine Co.'s Moulder.  
Double-Head Pratt & Whitney Horizontal Boring Mill.  
Cold Saw, 18" Blade, Pump and Pan.  
30" Springfield Knife Grinder.  
Wells Bros. Cutter and Reamer Grinder.  
Springfield Tool Grinder, 36" Wheel, with pump.  
2 Speed Lathes.  
4 35 H. P. Portable Boilers.  
1 Blacksmith Bellows.  
Also a complete line of new machines. Correspondence solicited.

Brown & Zortman Machinery Co.,  
PITTSBURGH, PA.

## 2ND-HAND TOOLS.

**Lathes.**  
18 in. x 8 ft. Field.  
36 in. x 18 ft. 15 ft. Fitchburg, blocks.  
27 x 14 Geo. Place heavy.  
22 x 12 ft. Fay & Scott.  
17 Stewart Speed Lathe.  
18 in. x 8 ft., comp. rest, Lowell.  
Axle Lathes, Bement (2).

**Planers.**  
24 in. x 4 ft. heavy. Leeds.  
26 in. x 6 ft. L. W. Ford.  
40 in. x 42 in. x 13 ft. Soilers, 2 heads.

**Shapers.**  
16 in. Geared Western.  
18 in. Ohio, crank.  
32 in. Prentiss-Juengst.

**Drills.**  
Ceiling, 3 ft. arm, Radial.  
Ceiling, Bollermakers.

**Screw Mch's.**  
No. 60 Garvin, 1/4 in., with wire feed.  
Garvin Hub Mch., 1/4 in. hole.

**Grinders.**  
No. 2 Surface, Universal Co.'s.  
54 in. x 18 ft. Springfield Surface.

**Wood Working.**  
No. 1 Greenleaf, Auto. R. E. Cut-off Saw.  
16 in. Goodell & Waters Planer, 1 1/2 in.  
Prybil Planer and Joiner.  
Ex. heavy 4 side Timber Planer and seven other machines.

**Miscellaneous.**  
50 Arbor Gage For Lathes.  
60 lb. Blue Drop Hammer.  
60 lb. Merrill Drop Hammer.  
Oil Separator, American.  
No. 1 B. & S. Univ. Miller.  
No. 2 F. & W. Screw Slotter.  
13 in. Bement Slotter.  
16 H. P. N. Y. Safety Engine, etc., etc., etc.  
300-lb. Bradley Helve Hammer.  
300-lb. Beaudry Hammer.  
4 in. Whitton Gear Cutter.

## FOR SALE.

1 20x36x48 Cross Compound Corliss.....\$3250  
1 18x42 Harris Corliss, overhauled.....1100  
1 14x48 Corliss.....600  
1 20x60 Corliss, first-class.....1000  
1 500 H. P. Berryman Heater.....150  
1 400 H. P. Knowles Comp. Jet Condenser... 250  
STEAM PUMPS, HEATERS, TRAPS.  
1000' 1" Pipe in three coils, 1/2 net price new.  
4 36" Davidson Vent. Fans.....\$25 each  
1 No. 4 Pedrick & Ayre Compressor, used three months, \$350.  
1 MORSE WILLIAMS ELEVATOR.....\$125  
1 WHITTIER ELEVATOR.....125

F. H. DAVIS & CO.

53 State Street, BOSTON, MASS.

## FOR SALE.

1 22x35 R. H. Watts Campbell Corliss Engine.  
1 10x12 Ideal Automatic Engine.  
1 10x12 Worthington Duplex Pump.  
1 15 ton Road Roller for sale or rent.  
1 Little Giant Steam Shovel.  
1 10x12 Worthington Duplex Pump.  
Iron Tanks, 300 to 1000 gallon capacity.

JAS. S. BRADEN, 26 Cortlandt St., New York.

## New Machinery for Sale

J. W. Cregar Agency,

The Bourse, Philadelphia, Pa.

One Ferracute Machine Co., SG No. 66 Press, made special, geared, 5 ft. 3 in. between frames, 1 1/2 in. stroke, weight 16,000 lbs. This machine is new and a special price will be made to move it quickly.

One (1) Philadelphia Machine Tool Co., No. 3 Double Crank Press with automatic positive clutch, heavily geared, 5 1/2 in. between frames, 1 1/2 in. stroke. Weight 4600 lbs. The above press is new and specially low price will be made to move it promptly.

One (1) Perkins Punch and Shear Machine, 34 in. depth of throat, single ended, capacity to punch 1 in. hole in 1 in. iron, and with punch, die and shearing blades. Weight 11,500 lbs., net. Price, \$875, f. o. b. cars Philadelphia. This is a new machine and low price put on it to move it promptly.

Two (2) No. 6A Gorton Universal disc Grinders with 16 in. disc, all complete, \$270 each, f. o. b. Philadelphia. These machines are new and complete in every way.

24 in. x 2 ft. Draper Engine Lathe, 18 in. x 8 ft. Draper Engine Lathe, 22 in. x 10 ft. Walcott Engine Lathe, 15 in. x 6 ft. Walcott Engine Lathe, 24 in. x 12 ft. Davis Engine Lathe.

All the above tools are new and special cut price will be made to move them quickly.

J. W. CREGAR AGENCY,

Machinery Hall,

The Bourse, Philadelphia, Pa.

## Second Hand Machinery

FOR SALE BY

Riverside Mills, of Augusta, Ga.

One AD Cook Artesian Well Pump, described as follows: one 8x36 steam cylinder, one air chamber, one discharge check valve, one 3 1/2" water cylinder, one set 3 1/2" valves, 12 1/2" 3 1/2" IJ casing and 7 number 4 poles.

Two American Stokers complete engine, blowers, etc., also extra set tuyere blocks and dead bars.

One Cotton Tie Rivetting Machine.

One Vacuum Pump (Deane make).

One No. 2 Nonpareil Mill.

One Heane Pneumatic Coating Machine.

One Simplex Engine.

One Air Compressor (belt power) and Receiver.

Three Chain Hoists.

One DA DB Pulley 7 1/2" x 3 1/2" x 4 1/2-16" K. S.

One DB Pulley 9 1/2" x 12" x 4" K. S.

One DB Pulley 10 1/2" x 14" x 4 1/2-16" K. S.

One Pulsometer described as follows: Suction 3", discharge 2 1/2", steam 3/4", to 1 1/2". Patented September 24, 1872 and March 8, 1881.

Two 90 h p. Boilers, fronts, grate bars, breast stays, rods, water columns, gauges, uptake and breeching complete.

## Wood-Working Machinery.

One 24x6 Pony Planer, Connell & Dengler.  
One 24x5 Pony Planer, J. A. Fay & Co.  
One 30" Cabinet Planer.  
One 30x12 Double Surfer, S. A. Woods.  
One 24x8 Atlantic Sizer.  
One 42" Back Knife Lathe.  
One Double end Tenoner.  
One No. 2 Tenoner.  
One Hall & Brown self-feed rip-saw.  
One heavy Berlin Machine Co. self-feed rip-saw.  
One 7" Moulder, 4 sided; S. A. Woods.  
One 10" Moulder, 4 sided, Hall & Brown.  
One 32" Band Saw, Fay.  
One Swing Saw made by Allen.  
One 24" and 42" 3 drum Invincible Sander.  
One 42" Columbia.  
One Double Spindle Shaper, W. R. & R.  
Wonder Sanders and Wonder Glue machines.  
Gasoline Engines, all sizes.  
Shafting, hangers, belting, pulleys, etc.

PRICE MACHINERY CO.

507 Great Northern Bldg.

CHICAGO, ILL.

## Bargains in Second-Hand Direct Connected Units.

One 50 K. W. "Eddy" generator directly connected to 13"x12" "Ames" horizontal automatic engine. 400 amperes, 125 volts, 250 revolutions.  
One 25 K. W. "Westinghouse" generator directly connected to 10"x12" "Ball" hor. automatic engine, 125 volts, 240 amperes, 300 revolutions.

L. P. SEYFERT'S SONS,  
437-441 N. Third Street, PHILADELPHIA.

## BARGAINS FOR QUICK DELIVERY.

No. 2 Gates Crusher.  
No. 3 Gates Crusher.  
No. 5 Style B, Gates Crusher.  
Double column Drop Hammer, cylinder 14"x 36"; fine order.  
Good Second-Hand Engines.  
12-ton Kelly Roller, fine as new.  
New Well Drilling Machine, cheap.  
Marion AA Shovel, fine condition.

CONTRACTORS' SUPPLY & EQUIPMENT CO., 232 Fifth Avenue, CHICAGO.

## These are O. K. and Ready to Ship.

No. 4 Nye Pump, \$140.  
10x16 Atlas Automatic Engine, \$325.  
12x18 Ide Automatic Engine, \$475.  
11x30 Putnam Automatic Engine, \$675.  
18x30 Box-bed Stationary Engine, \$650.  
50 H. P. "Economic" Boiler, \$475.  
125 H. P. Loco. Fire-box Boiler, \$625.  
60x16 Return Tubular Boiler (4) @ \$400.  
6x12 D. C. D. D. Hoist & Boiler, \$675.  
30 Horse Lidgerwood, No. 72 1/2, \$625.  
Lidgerwood Swinging Hoist, No. 203, \$235.  
7x10 D. C. D. D., Friction Hoist, \$650.  
Builders' Material Hoisting Rig, \$500.  
Otis, 150 H. P. Tubular Heater, \$135.  
Smith, No. 2, Gasoline Concrete Mixer, \$325.  
8 Western Cars, 24-in. gauge, 1 1/2 yd., @ \$35.  
10 No. 3 Austin Wheel Scrapers, @ \$25.  
45-Ton Bucyrus, 1 1/2 yd. Steam Shovel, \$3650.  
1/4 yard Marion Ditching Dredge, \$3000.  
1/4 yard Steam Shovel, \$3000, in Ohio.  
100 Drop bottom Gondolas, 40 M. @ \$250.  
50 Rock Drills; 12 Air Compressors.  
4 Vulcan Steam Pile Drivers.  
Also, Derricks, Centrifugal Pumps, Buckeye Lamps, Locomotives, new and relay rail. Send for printed list of Bargains, just issued.

## WILLIS SHAW,

171 La Salle St., CHICAGO.

## FOR SALE.

One Hydraulic Shear, 40-in. cylinder, 16-in. stroke, designed to cut 10x12-in. billets with 700 lbs. pressure. Manufactured by Geo. A. Hogg Iron & Steel Co., Pittsburgh. Shear has never been erected. Address

GUY DARST, G. S. A.,  
Va. Iron, Coal & Coke Co. Bristol, Tenn.

## FOR SALE.

1-54 in. x 12 ft. horizontal tubular boiler.  
1-12x20 horizontal engine.  
1-7 and 14x10 fore and aft marine engine.  
6 steam pumps—all sizes.

E. J. CODD CO., Baltimore, Md.

## FOR SALE.

1 15x22 Standard Gauge Locomotive with tender, wheel centers 44".  
1 12x12 1/2 Class C Straight Line Rand Air Compressor.

Also have quite a number of New and Second-hand Hoisting Engines, Machine Tools, Lathes, Planers, etc., in stock.

CHAS. T. LEHMAN, Birmingham, Ala.

## FOR SALE.

New I Beams and Channels cut to lengths for prompt delivery.  
We are always in the market for Cylinder Boilers, Smoke Stacks, Flues and Second-Hand Pipe. Also Scrap Iron and Steel in any quantity.

HENRY A. HITNER'S SONS,  
Aramingo Ave. and Huntingdon St., Philadelphia.

## FOR SALE.

Drain or Culvert Pipe.  
125 lengths of 30" Cast Iron Pipe, practically as good as new, at Charleston, S. C.

FRANK SAMUEL,  
Harrison Building, PHILADELPHIA, PA.

## FOR SALE.

1 18x42" Left Hand Harris Corliss Engine. Thoroughly Repaired. GUARANTEED good as new.

CLYDE MACHINE WORKS,  
39th St. and Union Ave. CHICAGO, ILL.

New and Second-Hand

Iron Tools and Woodworking Machinery

Corliss and Double Valve Engines for Trolley

Roads and Electric Lighting Stations.

H. C. BAKER & CO.

114 N. 3d Street, Philadelphia, Pa.

## WE SELL

Engines, Boilers,  
Pumps and Quarry  
Supplies,  
Concrete Mixers,  
Horse Rollers,  
Steam Drills,  
Air Compressors,  
Belting, Hose,  
and a full line of  
Contractors' Supplies.

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### In Stock. Immediate Delivery. Rebuilt and Guaranteed.

20" x 40" x 60" Cross Compound Corliss. 28" x 60" Wetherill Corliss. 26" x 60" Wetherill Corliss. 21" x 42" Rickards Corliss. 20" x 48" Frick Corliss. 20" x 42" Slater Automatic. 22" x 32" Watertown. 18" x 24" New York Safety Vertical. 16" x 27" x 16" Westinghouse Compound. 14" x 24" x 14" Westinghouse Compound. 12" x 22" x 20" Porter-Allen Automatic. 3 1/2" x 20" x 12" Westinghouse Compound. 16" x 36" Wetherill Corliss. 16" x 42" Harris Corliss. 16" x 36" Green Automatic. 15 1/2" x 15" Armstrong & Sims. 15" x 30" Buckeye. 15" x 20" Russell Automatic. 15" x 18" Taylor-Beck Automatic. 15" x 16" Ball Automatic. 14 1/2" x 15" Armstrong & Sims. 14 1/2" x 15" McIntosh & Seymour. 13" x 12" Armstrong & Sims. 13" x 14" Vertical Fitchburg Automatic. 12" x 24" Buckeye Automatic. 12" x 15" Ide Automatic. 12" x 12" Armstrong & Sims. 11" x 15" Atlas Automatic. 11" x 12" Chandler & Taylor Automatic. 10" x 16" Buckeye. 10" x 15" Atlas Automatic. 3 7/8" H. P. Westinghouse Standard Automatics. 2 5/8" Westinghouse Juniors. And many others. Stock is constantly changing. Let me have a list of your wants.

#### BOILERS.

2 66" x 18" Horizontal Tubulars, 125 lbs. steam. 66" x 16" Horizontal Tubulars, 120 lbs. steam. 2 150 H. P. Wood Water Tube, practically new. Large stock of new and second-hand Horizontal, Vertical and Locomotive Boilers. 2500 H. P. Berrymann Heaters. 3 500 H. P. Berrymann Heaters. 60 large Steam Pumps, up to 12" suction, assorted sizes. 50 H. P. Otto Gas Engine. 40 H. P. Otto Gas Engine. Large stock of Dynamos, Iron and Wood Working Machinery. Send for Special Catalogue of 2300 pieces.

### FRANK TOOMEY,

127-131 N. Third St. Philadelphia, Pa.

### A FINE ENGINE.

1100 H. P. Russell Engine Co. make, modern and up-to-date, heavy duty type, tandem compound. 24" x 48" x 30". Has 18" shaft, 30-ton wheel, 18 ft. diam., 44" face. Practically new.

#### WICKES BROS.

95 Liberty Street, NEW YORK CITY.

#### ENGINES.

One 1842 Harris-Corliss Engine. One 1620 S. C. Washington Iron Works' Engine self-contained. One 1322 S. C. Cardwell Engine. One 1118 C. C. Talbot Engine, Box-bed. One 1416 S. C. Engine. One 1115 Richmond Locomotive Works' S. C. One 1114 A. & C. C. C. Engine. One 728 Vertical Engine. One 6 H. P. Vertical Engine. One 4 H. P. Vertical Engine. One 20 H. P. Farquhar Tractor Engine. One 15 H. P. Aultman & Taylor Tractor Engine. One 12 H. P. Birdsall Tractor Engine. One 10 H. P. Frick Engine and Boiler mounted on wheels.

#### BOILERS.

One 80 H. P. High-Pressure R. T. Boiler, good for 120 lbs. steam working pressure. One 80 H. P. R. T. Boiler. One 70 H. P. R. T. Boiler. One 60 H. P. R. T. Boiler, Half-Front. One 50 H. P. R. T. Boiler, Full-Front. One 50 H. P. Economic Boiler. One 40 H. P. Economic Boiler. One 40 H. P. R. T. Boiler, Half-Front. One 25 H. P. R. T. Boiler, Half-Front. One 20 H. P. R. T. Boiler, Half-Front. One 15 H. P. Locomotive Type Boiler on wheels. One 30 H. P. Vertical, and several smaller sizes. Also several sizes of pumps and other machinery. The above are in A-1 condition. Write for particulars.

Jno. A. Waters & Co., Richmond, Va.

### FOR SALE-ENGINES.

14" x 24" Cooper automatic; 12 1/2" x 24" slide valve; 11" x 16" center crank; 30 horse Atlas automatic; 10 horse vertical; 5 horse vertical; 4 horse horizontal; two 1 1/2" x 24" Porter Allen's; 14" x 24" Corliss; 13 horse Russell traction; 12 horse Kelly traction; 10 horse Garr Scott traction; 5 10 horse portable engines and boilers on wheels; one 25 horse portable engine and boiler on skids, Blandy make; one 20 horse portable engine and boiler on skids; one fire engine, Cole Bros. make. Boilers, 75 horse tubulars; 50 horse tubulars; 25 horse tubular; 25 horse Scotch boiler; 6 horse Scotch boiler, new; 35 horse Scotch boiler, new; two 12 horse vertical boilers; one 6 horse vertical boiler; one 5 horse vertical boiler; one 200 horse Brownell heater; one heavy plate punch for boiler work; one 3 horse gasoline engine; one duplex McGowan pump, 2 1/2" suction; one duplex Hall pump, 1 1/2" suction; one copper boiler for marine or automobile; 3 horse; one 2 horse boiler for marine or automobile; 1000 pulleys different sizes; 1500 feet of belting, double and single; tanks, injectors, boiler tubes, machinery of every description, at one-third its actual value.

B. L. CASEY MACHINE CO., Springfield, Ohio.

### MINE ENGINES.

Made by Dickson, 13" x 18" cylinders, two loose drums on one shaft, link motion 9 ft. gear wheel, powerful construction.

### WICKES BROS.

95 Liberty St., New York City.

#### FOR SALE.

GASOLINE ENGINES, GENERATOR, SWITCHBOARD.

Two 60 H. P. Fairbanks-Morse Gasoline Engines, with all attachments complete. One 60 Kilowatt, 2200 volt, alternating current Westinghouse Generator, with Exciter, Switchboard, instruments, etc. The above machinery is in operation and subject to inspection at any time. Installation of larger plant reason for desiring to sell. Engines and Generator suitable for electric lighting plant of reasonable capacity. Electric can be used to good advantage in small pumping plant.

R. H. WOODWORTH, Secretary, Port Arthur, Tex. Port Arthur Water Co.

### FOR SALE.

1 50 H. P. Engine, side crank, self-contained, 12x18 cylinder, flywheel 60" diameter, 14" face; all appurtenances, built by Casey & Hedges, Chattanooga, Tenn., and none better made. In use about three years, with best care.  
2 25 H. P. Boilers, Scotch marine, return tubular, stacks 25", 30" diameter; all appurtenances and pipe connections. Built by Casey & Hedges, and none better built. In use about three years, with best of care.  
3 Worthington Prospecting or Sinking Pumps, 4 1/2" x 2 1/2" x 2 1/2", steam pipe 3/4" discharge 1 1/2", suction 2", capacity 3000 gals. of sandy, gritty water. In fine condition.  
4 Centrifugal Pump, 2" discharge, 2 1/2" suction. Made by Thos. Williamson, Hockessin, Del. A splendid pump, in fine condition.  
5 Flory Hoisting Engine, cylinder 3/4", friction drum 10" diameter, 16" long. Capacity 900 lbs., with single line.  
6 Horse Power Hoisting Drums, with automatic safety attachment. Made by Thos. Carlin's Sons, Allegheny, Penn.  
7 Fairbanks Trussed Lever Scales, Platform 10' x 5' 1/2", capacity 26,000 lbs.  
8 Fairbanks Portable Scales, capacity 1000 lbs. large platform for barrows.  
Also a large lot of Pulleys, 6" to 36" diameter and 6" to 28" face, iron and wood split Belting, Chesapeake brand, 25' to 52' and 4" to 14" wide.  
Rubber, 12, 13 and 18' long, 6" face.  
Also, complete machinery for washing clay.  
1 Imhauser Watchman's Time Detector, 10 stations.

### KAOLIN MANUFACTURING CO.

Waynesville, N. C.

### Machinery Bargains.

#### Engines.

1 14x42 Harris Corliss.  
1 12x36 Greene Corliss.  
1 12x30 Lane & Bodley Corliss.  
1 18x42 Bates Corliss.  
1 18x25 Watertown Automatic.  
1 12x24 Wright Automatic.  
1 10x12 Ball Automatic.  
1 10x16 Atlas Automatic.  
1 8x10 Erie City Automatic.  
1 7x8 Gem Automatic.  
1 10x20 Throttling Governor.  
1 11x18 Throttling Governor, with Riding Cut off.

#### Boilers.

1 4x14 Half Arch Front.  
1 5x14 Hor. Tub.  
1 5x15 Hor. Tub.  
1 5x12 Hor. Tub.  
1 100 H. P. Stirling Water Tube.  
1 10 H. P. Portable Boiler and Engine.

#### Wood Working Machines.

1 84" 3-Drum Royal Invincible Sander.  
1 Heavy Boring and Mortising Machine.  
1 Upright Mortiser.  
Saws, Planers, Tenoners, Shafting, Hangers, Pulleys, Belting.

CLEVELAND BELTING & MACHINERY CO.  
8 Long Street, Cleveland, Ohio.

### GREAT BARGAIN.

125 H. P. Westinghouse Standard Engine, guaranteed condition.  
Will buy 50 light T. H. or Brush Arc generator.

#### J. W. KOHN & CO.

14 Merwin Street, CLEVELAND, O.

#### FOR SALE.

1 18" Turret Lathe.  
1 18" Engine Lathe.  
1 14" Engine Lathe.  
1 12x14 Upright Engine.  
1 12x14 Atlas Engine.  
3 Gasoline Launches.  
1 6 H. P. Marine Engine.

Let us have your requirements. We can fill them.  
PATAPSCO MACHINE & SUPPLY CO.  
Baltimore, Md.

### FOR SALE CHEAP.

1 48-inch Double Cylinder Shoddy Card, Bramwell feed.  
1 Broad Parks & Woolson Teasel Gig.  
1 Finisher Fronts, 60 inches, 13 Rolls, Smith's make.  
1 Finisher Front, 48 inches, 11 Rolls, Furbush make.  
Address BOX 4, Clifton Heights, Del. Co., Pa.

#### FOR SALE.

Immediate delivery at an attractive price.

### 48-in. Riveted Steel Pipe

3/4 and 1/2 inch in thickness.

E. KEELER CO., Williamsport, Pa.

### FOR SALE.

Locomotives, New and 2nd Hand. Cableway 600 feet long complete. 200-ton 56 lb. Relaying Rails. 40-ton 70 lb. Relaying Rails. 45-ton 25 lb. Relaying Rails. 80-ton 30 lb. Relaying Rails. New Rails, all weights. 1 1/2-yd. Marion Improved "A." 1 1/2-yd. Bucyrus, 45-ton.

### CLARK & HINES

Baltimore, Md.

R. R. Equipment, Mine and Contractors' Supplies.

## BOILERS AND ENGINES.

#### BOILERS.

6 75" x 16" Horizontal Tubular, 4" tubes.  
3 60" x 16" Horizontal Tubular, 4" tubes.  
3 60" x 16" Horizontal Tubular, 4" tubes.  
12 60" x 14" Horizontal Tubular, 4" tubes.

#### PORTABLE.

2 200 H. P. Vertical, 8" tubes.  
1 100 H. P. Locomotive Type, 3" tubes.  
1 80 H. P. Locomotive Type, 2" tubes.  
2 80 H. P. Locomotive Type, 3" tubes.  
2 150 H. P. Cahall Water Tube.

#### ENGINES.

10x14" Russell Automatic.  
11x10" Westinghouse Standard.  
12x24" Buckeye, style "A."  
13x12" Ball Automatic.  
14x16" Greene Automatic.  
15x15" Taylor-Beck Automatic.  
13x22x13" Westinghouse Compound.  
16x42" Hamilton Corliss.  
18x20" Slide Valve Engine.  
20x24" McIntosh-Hemphill Slide Valve.  
23x60" Corliss.  
24x33" Buckeye, style "B."  
24x48" St. Louis Corliss.  
26x48" Corliss.  
28x60" Corliss.  
32x54" Bates Corliss.  
38x72" International Power Corliss.

This is but a small part of our stock, but our complete list will be mailed upon application.

## WICKES BROTHERS

PITTSBURGH, PA.

ALSO

SAGINAW. NEW YORK. CHICAGO.

**WANT TO SELL.**—1 5-ton Electric Crane. 10 K. W. Motor, almost new. 1 G. & G. Air Compressor, 10 1/2 x 12 x 10. 2 G. & G. Vacuum Pumps, 14 x 10 x 9 and 12 x 20 x 9, almost new. 1 200 H. P. Side Crank Engine. 1 100 H. P. Center Crank. 1 50 H. P. Side Crank and 1 15 H. P. Center Crank, self-contained. 1 20 H. P. Side Crank Engine. 1 50 H. P. Old Style Side Crank Engine. 1 8x10 Erie Ball Automatic Engine. 1 40 H. P. Vertical Boiler. 1 40 H. P. Horizontal Boiler. 1 80 H. P. Horizontal Boiler, complete with all bricks. 1 each 8 1/2 x 10, 7 1/2 x 10, 8 x 5 Double Cylinder and Single Drum Lidgetwood Hoisting Engines, excellent condition, 42 ft. stack, 36" diameter. Also a lot of Wire Hoisting Rope and Cables, Pumps, Boilers, Rock Drills, Pipe, Hose, Rails, Motors, Dynamos, and anything you desire.

**WANT TO BUY.**—5 125 or 150 H. P. 2 160 H. P. Horizontal Return Tubular Boilers; also 1 40 H. P. Locomotive Boiler; also 1 4 H. P. Vertical Boiler; 1 16 x 16 High Pressure; also 14x7 1/2 x 5 1/2 Pumps; also lot of Tank Pumps and High Pressure. 1 25 Center Crank Automatic Engine. 1 50 to 80 H. P. Side Crank Horizontal Engine. 1 4 1/2 x 6 Discharge Centrifugal Pump. 1 200 H. P. Upright or Water Tube Boiler. Must be second-hand but in perfect condition. Also Wire Hoisting Rope and Cables, all sizes. We buy anything you have to offer.

ANTHRACITE MACHINERY & SUPPLY CO.  
Long Distance Telephone. ALLENTOWN, PENNA.

## Machinery for Sale.

#### ENGINES.

1 14x18 Plain, Chandler & Taylor.  
1 12x20 Plain, Slide Valve, Phoenix.  
1 9x12 Plain, Slide Valve.  
1 7x14 Plain, Slide Valve.  
1 7x10 Plain, Slide Valve.  
1 5x8 Plain, Slide Valve, Vertical.

#### PUMPS.

1 8x5x12 Hooker Plunger Pump.  
1 7x4 1/2 x 10 Hooker Piston Pump.  
1 6x5x10 Reilly Piston Pump.  
1 3 1/2 x 2 1/2 x 4 Knowles Piston Pump.  
1 3 1/2 x 2 1/2 x 4 Cameron Piston Pump.

#### BOILERS.

2 Batteries each 2 48" x 20", with 12 6" flues.  
1 Boiler 48" x 16", with 40 3 1/2" flues.  
1 Boiler 36" x 16", with two 14" flues.  
1 8 H. P. Portable Boiler on wheels.  
1 Portable Engine, 8 H. P., on wheels.  
1 Portable Engine, 8 H. P., on base.  
2 Iron Frame Buhr Mills.

#### C. F. TRAMPE,

942 N. Main St. ST. LOUIS, MO.

#### FOR SALE.

Two hundred and fifty tons of new forties; two hundred and fifty tons new thirties; one 16" cyl. Roger Locomotive, good condition; one 15" cyl. Baldwin Locomotive, good condition; one 15-ton stand. gauge Locomotive, for wood or iron rails; two 28-ton 14" cyl. stand. gauge Locomotive, fine condition. Apply

SABEL BROTHERS, Jacksonville, Fla.

### FOR SALE.

We own a choice lot of

#### RELAYING

25 lb. and 30 lb. STEEL RAILS

and Splice Bars and Spikes for same. Also a number of Frogs, and Stub and Split

#### SWITCHES.

If you want to buy either new or re-laying Rails—any weight, or Switches, write us.

#### ROBINSON & ORR,

419 Wood Street, Pittsburgh, Pa.

### SPECIAL LOCOMOTIVE SALE.

We own and offer the following Locomotives at the most attractive prices in the market.

#### Standard Gauge.

18x24 Cylinders, 10 Wheeler Rogers (A Bargain)  
18x22 Cylinders, 10 Wheeler Baldwin  
18x22 Cylinders, 10 Wheeler Baldwin (Just rebuilt)  
17x24 Cylinders, Passenger Baldwin (A Bargain)  
16x24 Cylinders, Passenger Taunton (Rebuilt)  
14x22 Cylinders, Passenger, 27 tons  
15x24 Cylinders, Passenger (Rebuilt)  
10x16 Cylinders, Passenger Porter (Rebuilt)  
9x14 Cylinders, Saddle Tank Porter (Rebuilding)

#### 36-inch Gauge.

13x20 Cylinders, C. & N. W. Passenger (Excellent Condition)  
10x16 Cylinders, Porter Saddle Tank.  
10x14 Cylinders, Porter Dummy.  
9x14 Cyl., Porter Saddle Tank, 36", 42", 44" Gauge.  
9x14 Cyl., Vulcan Saddle Tank, 42", 44" Gauge.  
7x12 Cylinders, Shay Geared (wood or steel rail).  
8x7 Cylinders, Dunkirk Geared, 14 tons.  
6x12 Cylinders, Petersburg Geared, 12 tons.  
6x12 Cylinders, Porter Saddle Tank, 8 Tons.  
8x16 Cylinders, Porter Saddle Tank, 10 Tons.  
7x12 Cylinders, Porter Saddle Tank, 8 Tons.  
6x10 Cylinders, Porter Saddle Tank, 6 Tons.  
Standard and Narrow Gauge Passenger and Combination Coaches, Box, Flat, Logging, Dump, Gondolas and Caboose Cars. Prompt deliveries. Specifications and prices furnished on application.

BOWEN & STREET EQUIPMENT CO.  
Main Office, Norfolk, Va. Shops, Suffolk, Va.

### FOR SALE.

## New Light Steel Rails,

ALL WEIGHTS,

WITH

## Track Fastenings.

### THE STEEL RAIL SUPPLY CO.

100 Broadway,

NEW YORK, N. Y.

#### RAILS.

We own 1000 Tons 35 lb. First Class Re-laying Steel Rails with Fastenings, in East Texas, on 3 large Railroads. 8, 12, 16 and 20 lb. New Steel in our warehouse. 25 to 40 lb. New Steel in stock at Mill. New and Relay any weights.

Locomotives, Equipment and Supplies of all kinds.

### WESTERN SUPPLY & MFG. CO.

East St. Louis, Ill.

### NEW, LIGHT STEEL

## RAILS

### FOR SALE.

Immediate Shipment.

16, 20, 25, 30 and 35-lb. Steel "T" Rails with complete joints.

### CLEARFIELD STEEL & IRON CO.

Mills at Clearfield, Pa.

Offices, German Natl. Bank Bldg., PITTSBURGH, PA.

#### FOR SALE CHEAP.

Six Standard Gauge Locomotives.

In good condition. Weight on drivers 25 tons.

#### CAINE & PLITT,

824 Real Estate Trust Bldg PHILADELPHIA, PA.  
Long Distance Telephone 3-54-58.

### MANUFACTURERS

## Light Steel Rails,

12, 16, 20, 25, 30 and 35 lbs. with splices.

Prompt delivery.

## Maryland Rail Co.

CUMBERLAND, MD.



**Contractors' Material****For Sale or Rent.**

**LOCOMOTIVES**—One 10x16, 36" gauge with tender.  
One 10x12 standard gauge Baldwin dummy type.  
Three 16x24 S. G. American type, with tenders.  
One 36" gauge 5½x7 Byers geared.  
One 12-ton Davenport, 36" new.  
One Baldwin 36" gauge in good order.  
One 8x16, 42" gauge Bailey saddle tank.

**CARS**—Both narrow and standard gauge, dumps and flats.

**STEAM SHOVELS**—several little Giants, Marions, etc., too numerous to mention.

**TRACTION ENGINES**—Three, from 18 to 25 horse power each.

**PUMPS**—One Worthington compound duplex steam, 12x18½x10½x10.

**HOISTING ENGINES**—about 7½x10 d c d with or without boiler, about 8x10 d d s c without boiler, male and female friction hoist, and others.

Stationary engines all sizes, crushers, boilers, etc.

**HARPER MACHINERY CO.**

Park Row Building, New York.  
Yards and Shops, Newark, N. J.

**MANUFACTURERS****Light Steel Rails**

16-20-25-30-35 and 40 lbs. per yard.

Prompt shipment on all orders.

**SCHONTHAL IRON & STEEL CO.**

Mills and General Offices,

CUMBERLAND, MD.

**RAILS—LOCOMOTIVES.**

400 tons 35 and 40-lb. steel relay rails.  
Locomotives—Narrow and standard gauge. 50 locomotives on hand.

**Southern Iron and Equipment Co.**  
ATLANTA, GA.

**40-Pound Relay Steel Rail.**

200 tons for sale cheap.

**WALTER A. ZELNICKER SUPPLY CO.**

Department M. In St. Louis.  
Shall we send you our Daily Rail and Equipment Bulletin?

**FOR SALE.****NEW STEEL RAILS.**

12, 16, 20, 30, 35 and 40 lbs., with splice bars, bolts and spikes. Immediate shipment from stock.

**JOHN J. HAMEL & CO.**

House Building. PITTSBURGH, PA.

**FOR SALE—RAILS.**

For immediate shipment from stock, 8, 12, 16, 20, 30, 40, 70, 75, 80 and 85-lb. New Rails. Also 20, 25, 30, 40, 50, 55 and 60-lb. Relays, for prompt shipment. Cut Rails a Specialty.

**RICHARDSON & CO., Inc.**

300 Ninth Street, PITTSBURGH, PA.

**FOR SALE.**

1 9x14 Locomotive, 36" gauge.  
9 Chicago Pneumatic Riveting Hammers.  
3 Philadelphia Pneumatic Riveting Hammers.  
1 125 H.P. return tubular Boiler, 125 lbs. pressure.  
1 Air Compressor, 14-16x18, high pressure.

**J. C. Saxton, 18 Broadway, New York City, N.Y.**

**FOR SALE.**

Several Narrow Gauge Engines 10 to 20 tons; also standard from 40 to 60 tons. 1 16x24 Switcher in splendid condition. Stationary Boilers and Engines. 1 Perkins Shingle Machine as good as new. Agent for the Russell Wheel and Foundry Co. Cars. Also the Parker Steam Skidder.

**J. H. MACLEARY & CO.**  
Suffolk, Va.

**RAILS.**

LIGHT SECTIONS, 8 TO 40 POUND.

Special Price to Dealers.

**UNION RAIL COMPANY,**

Farmers Bank Building, PITTSBURGH.

**For Sale—Locomotives and Rails.**

One 20x24 Baldwin Consolidation.  
One 19x24 Dickson American type.  
One 18x24 Dickson Mogul.  
Three 17x22 Dickson Six-wheel Switchers.  
One 15x22 McQueen American type. A bargain.  
One 12x21 Dickson Four-wheel Saddle Tank.  
One 12x16 Baldwin Forney type.  
One 9x14 Porter Four-wheel.  
All of the above standard gauge.

**In 3 ft. Gauge we have:**

One 12x16 Mason Forney type.  
One 8x16 Porter Four-wheel Saddle Tank.  
One 8x12 Shay Geared, built in 1896, (in South Carolina).  
One 7x12 Baldwin Four-wheel Saddle Tank.  
One 6x10 Porter Four-wheel Saddle Tank.  
Also New and Relaying Rails of all weights.

**BIRMINGHAM RAIL & LOCOMOTIVE CO., Birmingham, Ala.**

**N. Y. Elevated R. R. LOCOMOTIVES**

Ready for Immediate Delivery.  
Excellent Condition.

4' 8½" Gauge, Forney Type, Cylinders 11"x14," 11"x16," 12"x16."

Suitable for Logging Roads, Contractors, Switching, &c.

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86 to 70 Beaver Street, N. Y. CITY.

Steel Rails, Cars, Locomotives, R. R. Supplies.

**FOR SALE.**

300 tons 60½-lb. steel relaying rails with angle bars, Alabama and Georgia delivery.

900 tons 70-lb. steel relaying rails with angle bars, Ohio delivery.

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Second-hand locomotives, coaches, steam shovels, and other railway and contracting material.

**THE ISAAC JOSEPH IRON CO.**

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50-ton Freight and Switch Engines for prompt delivery.

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We have a large quantity of steel, A. S. C. E. section, various weights, with or without fastenings, for immediate or future delivery. Also have "seconds" for sale.

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**WANTED.**

To purchase or lease for a term of years 500 standard gauge coal cars in good condition for immediate use.

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One 14-ton Baldwin, rear tank, standard gauge.  
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Five Climax logging cars, 36" gauge.  
Steam shovels, hoisting engines, etc.

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Empire Building. PITTSBURGH, PA.

**Locomotives, Cars, Steam Shovels.**

7 Standard Gauge Passenger Cars for sale or lease.

Locomotives, Stand. or Narrow Gauge.

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60 to 80 lb. A. S. C. E. section.

Delivery guaranteed.

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12,500 tons New Steel T Rails, 60, 70, or 80 lbs. per yard. July and August delivery.

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2 yd. Bucyrus, first-class condition.  
1½-yd. L. G. Crane Trac. Shovel, 2 mos.  
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Four (4) 18"x22" Cylinder Baldwin, ten-wheel Freight Standard Gauge Locomotives, weight about 42 tons; six drivers, 50" diameter; separate eight-wheel tender.

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Twenty (20) Flat Cars, 30' long, 20 tons, capacity, Diamond Trucks, M. C. B. Automatic Couplers, hand brakes.

Twelve (12) Coaches, 51' over all; carry 54 passengers; good coaches; cheap.

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2 Little Giant Steam Shovels, \$2500.00 each, Pittsburg

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Three 9x14 36" gauge Porter Locomotives, almost new, \$2500.00 each, Stewart, Pa., P. R. R.

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**SPECIAL LOT**

Excellent Condition

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All Types and Weight

**COACHES**

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Of All Description

Very Attractive Prices

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**RELAYING  
56 and 60-lb.  
RAILS.**

With heavy angle splice bars  
An unusually fine lot of relayers. Quick shipment.

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**Dump Cars**

FOR

CONTRACTORS, MINES,  
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WHEELS, BRASSES, TRUCKS.

Send for List and Prices.

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We have for sale a pair of Putnam engines, 30x42" cylinders, 75 revolutions, very extra heavy fly wheel in the center, 36" face, together with condenser, primary and auxiliary heater, and feed water pump and pipe connections between the two cylinders. They are rated at 300-h.p. at 80 lbs. pressure, without condensing. They developed 515 indicated horsepower last winter with condenser at 105 lbs. steam pressure.

We will sell the whole outfit delivered cars f. o. b. Fitchburg for \$2000.

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STANDARD GAUGE PRIVATE HORSE OR STOCK CAR, adjustable stalls for carrying sixteen heads, complete in every detail, in first-class condition. BALDWIN STANDARD GAUGE DUMMY LOCOMOTIVE, 9x12. Has been thoroughly overhauled and put in first-class condition.

Both of the above will be sold at a low price.

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**17 NEW 36" gauge 30,000 lbs. capacity**

**Flat Cars**

For Prompt Shipment.

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9 Box Cars, 54' long, 60,000 lbs. capacity. 30 Box Cars, 30' long, 40,000 lbs. capacity. 200 tons 56-lb. Steel Relays. 150 tons 60-lb. Steel Relays. 50 tons 53-lb. Steel Relays. Also New Rails, 8 to 40 lbs.

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**Steel Rails, Coal, Coke.**

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12 lb. to 40 lb. per yard and Splices.  
New Heavy Sections to 80 lb.  
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**Ornamental and Machinery Patterns**  
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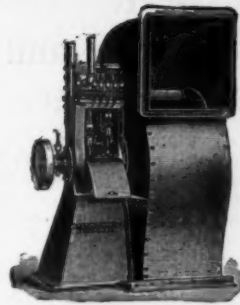
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OF EVERY DESCRIPTION.

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*Saves cost of chimney.  
Burns cheap fuel.  
Increases boiler capacity.*



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Blowers  
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Forges  
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Steam Traps  
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**BALLAST CARS**

250 Center Dump IMMEDIATE DELIVERY.  
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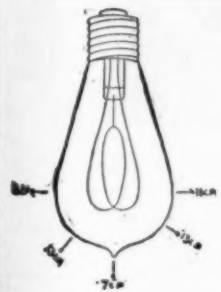
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**A full line of  
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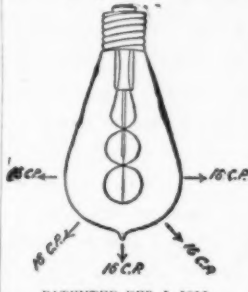
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THE  
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Side.....16 Candle Power  
Angle.....13 " "  
Tip.....7 " "  
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THE  
STERLING SPECIAL



Side.....16 Candle Power  
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AVERAGE.....16 " "

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A  
LITTLE  
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**Regular Type Lamp 96 C.P. : 12 C.P. = 8**

**Sterling Special Lamp 96 C.P. : 16 C.P. = 6**

**TAKE THE AVERAGE CANDLE POWER**

8 Regular Type Lamps 16 c. p. = 96 c. p. @ 56 Watts per Lamp  
= 448 Watts.

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Lamp = 336 Watts.

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**Do you want more light for the same current or do  
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**SPECIALTIES.**

Diamond Point Spikes (Patented). Best for soft wood ties.

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Diamond Double Neck and P. R. R. Standard Spikes, with  
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Track Bolts with cut and cold rolled thread.



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**ALSO MANUFACTURERS OF**

Pressed Point Railroad and Boat Spikes of all sizes, Plain and Angle Joints of  
iron, soft and high carbon Open Hearth steel, Merchant Bar Iron and Steel,  
Angles and Channels, Horse and Mule Shoes, Rivets, Machine Bolts, Etc.

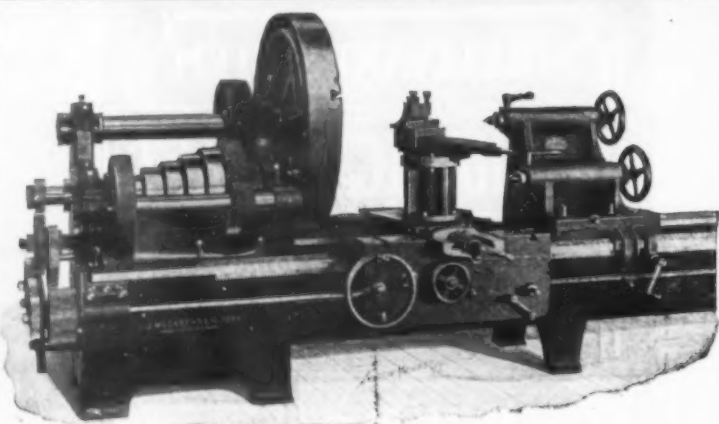
Main Office and Works, Wilmington, Del.

Philadelphia Office - No. 503 Real Estate Trust Bldg.

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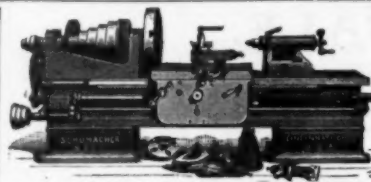




## I Take It, That Every Now and Then, You Need a Big Lathe,

but perhaps not often enough to justify you in tying money up in a tool that you can't keep at work all the time. If that is your situation, my new Heavy Pattern 20"-48" Double Spindle Lathe is the key to it. It's something like the handy man who, through exceptional skill, is enabled to do a very wide range of work and save you the salary of a high-priced man who can handle only one kind of work, and whose services could not be made profitable in your shop. It is not a makeshift nor a "Jack of all trades." Everything it can do at all it does correctly. It has a number of important features that are not to be found in any other lathe, and it costs about half as much as the single big tool whose place it so ably fills, taking all work from a 20" to a 48" swing. You'd better let me send you the details and a partial list of users.

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**SCHUMACHER & BOYE,**  
**Engine Lathes,**  
Cincinnati, Ohio.

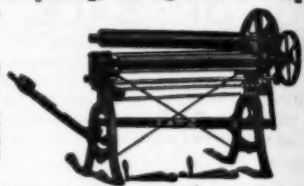


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Different styles for Squaring, Slitting and Trimming  
All sizes. Automatic Self-Opening

**Bending Rolls**  
(revolutions)

Also Angle Iron Bending  
Rolls, Squaring  
Shears, etc., machines  
for working Sheet  
Metal.



**BERTSCH & CO.**  
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## Newport News Shipbuilding & Dry Dock Co.

WORKS AT NEWPORT NEWS, VA., ON HAMPTON ROADS.

Equipped with two large Basin Dry Docks of the following dimensions:

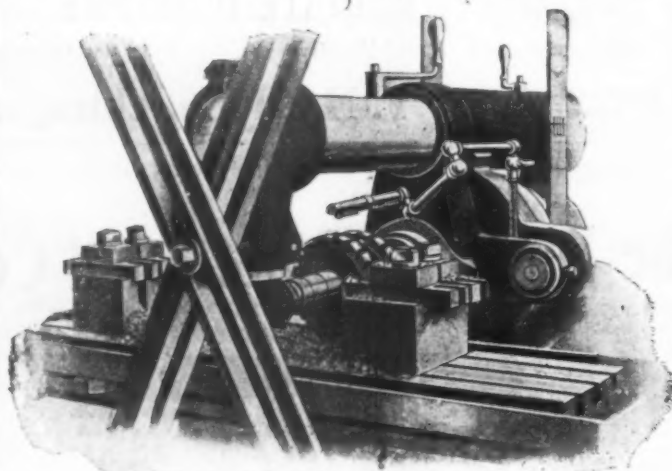
	No. 1.	No. 2.
Length on top .....	510 feet.	527 feet.
Width on top .....	130 "	162 "
Width on bottom .....	50 "	80 "
Draught of water over sill .....	25 "	30 "

Shops are equipped with modern machinery capable of doing the largest work required in ship construction. Tools driven by electricity and compressed air used in constructing and repairing vessels. For estimates and further particulars, address,

**C. B. ORCUTT, Pres't,**

**No. 1 Broadway, New York.**

## IF YOU HAVE EVER TRIED



rate of  $\frac{3}{4}$  in. per minute. The Geared Feed makes such cuts possible. It's a feature well worth investigating. It is described in our Pamphlet Series B, Examples of Rapid Milling.

## The Cincinnati Milling Machine Company,

CINCINNATI, OHIO, U. S. A.

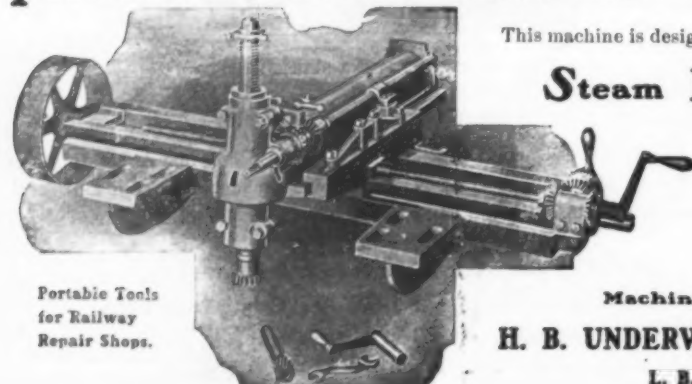
EUROPEAN AGENTS—SCHUCHARDT & SCHUTTE, Berlin, Cologne, Vienna, St. Petersburg, Brussels, Stockholm, Liege, Milan, Paris, and Bahia. CHAS. CHURCHILL & CO., London, Birmingham, Manchester, Newcastle-on-Tyne and Glasgow. THE NILES TOOL WORKS CO., 23 Victoria Street, London, S. W.

to do heavy "gashing" on a small miller you will appreciate this illustration.

If you haven't, this may show you how to save money on similar jobs. The stock is 40-carbon machinery steel, 1 in. thick. Two pieces are milled at one time. The slots are 11-16 in. wide and the cutters are 6 in. diameter. The machine is fed  $\frac{3}{4}$  in. per minute.

It is a No. 2 Plain Cincinnati and it has the Geared Feed. Think of it—gashing two slots, each 11-16 in. wide, out of solid 1 in. steel bars, at one time at the

## PORTABLE MILLING MACHINE



Portable Tools  
for Railway  
Repair Shops.

This machine is designed for facing

## Steam Engine Valve Seats

in solid steam chests especially, but is used on various kinds of work where it is more convenient to carry a portable machine to the work, than to carry the work to the shop. It is strongly geared, has power feed in both directions, and can be used in any posture—horizontal, vertical or inclined. It works accurately and rapidly and can be run by hand-wheel, small steam engine, air or electric motor.

Machines of Any Size Built to Order.

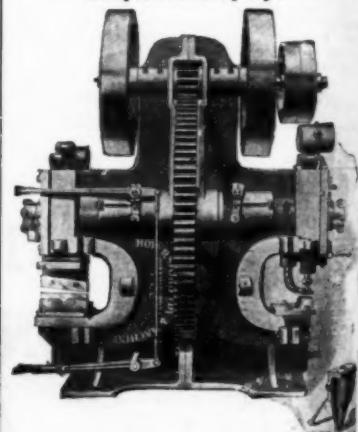
**H. B. UNDERWOOD & CO.,**

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**L. B. FLANDERS MACHINE WORKS.**

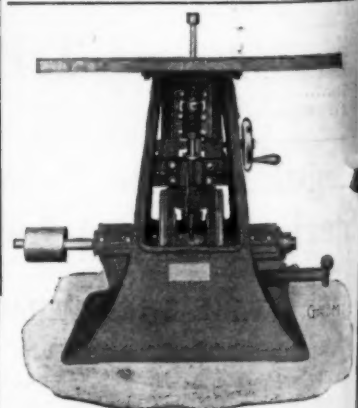
## We build a full line of POWER PUNCHES and SHEARS

Combined and Single.  
Adapted for all purposes.



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Single Spindle Reversible Shaper.

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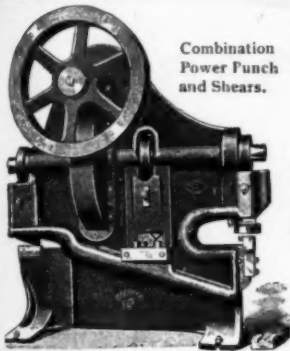
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VERY OFTEN A SPECIAL MACHINE IS WANTED for doing some extraordinary work which the ordinary machine cannot do. We are in business for the specific purpose of making a special machine of this kind, and can work from drawings and specifications. We are completely equipped to meet your requirements.

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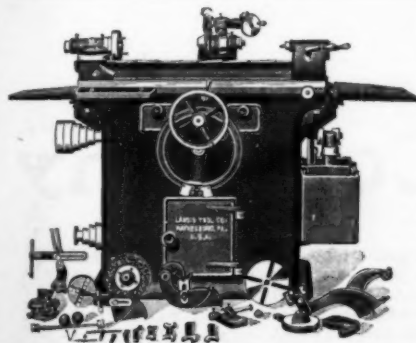


Combination  
Power Punch  
and Shears.

### Tools For Sheet Metals Presses, Punches, Forming Rolls,

Squaring, and Rotary Shears,  
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Machinists—Knowing How, Is Money  
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### The Landis Uni- versal Grinders

will turn out the highest grade of work economically. They are built in 8 sizes, having a swing of 8" to 20" and from 20" to 144" between centers, enabling a wide range of work to be done with them. Facts of interest in our Catalogue.

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MACHINERY FOR THE MANU-  
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One 38 in. x 20 ft. New Haven Engine Lathe.  
One each No. 2, No. 3 and No. 4 Brown & Sharpe Universal Milling Machines.  
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One 36 in. x 16 ft. Schumacher & Boye Engine Lathe.  
One 26 in. x 48 in. x 16 ft. McCabe Double Spindle New Style Engine Lathe, with Geared Face Plates.  
One 24 in. x 16 ft. Draper Engine Lathe, with Triple Gears and T. A.  
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Lathes from 10 in. up and Shapers of all strokes. A complete line of Drill Presses, Shapers, Planers, etc., always in stock.

Small Tools of Every Variety and Size, Complete Assortment.

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MACHINERY and SUPPLIES.

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A line of good, reliable tools.

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Try The B-L Co. Anti-Friction Babbitt.

Engine Lathes, 16 in. to 24 in. Swing.



Strictly High-Grade  
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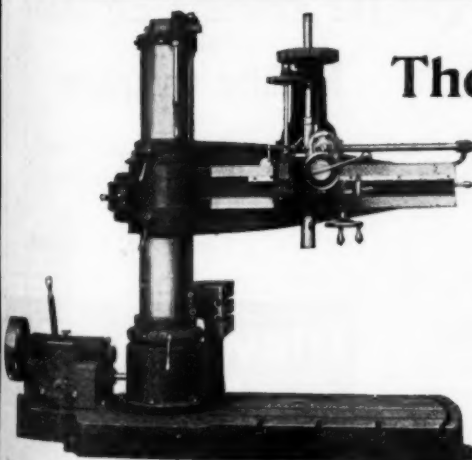
with all modern im-  
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Our Catalog of  
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A few of the "56 POINTS OF VANTAGE" embodied in

### The New Bickford Radial.

The arm is made in pipe section in order to overcome the combined stresses of twisting and bending.

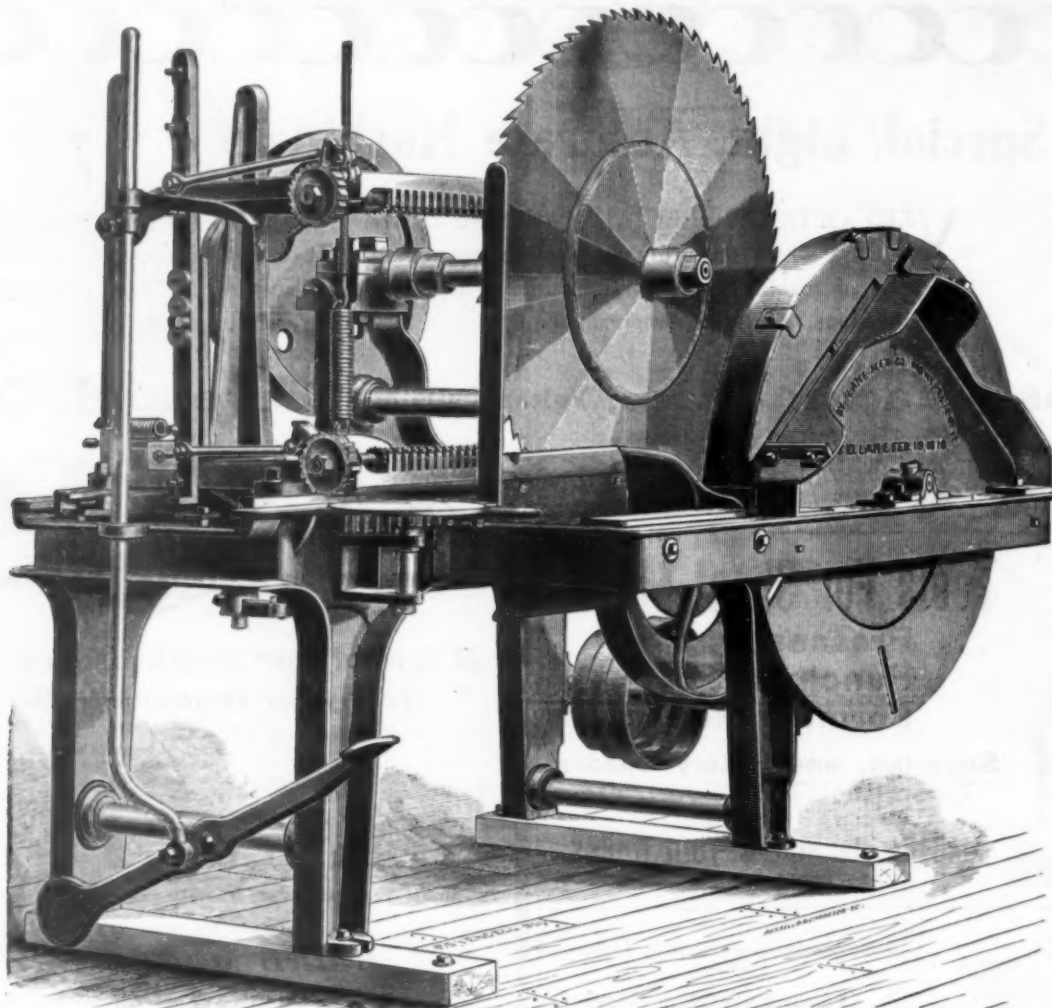
Back-gears furnish four changes of speed, each of which transmits to the spindle more than double the pulling power of the next faster one.

The spindle is provided with a safety stop that throws out the feed when the spindle has reached its limit of movement. Our booklet, "56 Points of Vantage," tells the rest. Send for it.

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Water Wheels, Planers, Traveling Cranes, Log Jackers, Log Canters, Log Niggers, Drag Saws, Swing Saws, Swing Trimmers, Timber C/O Saws, Live Rolls, Dead Rolls, Hand Feed Edgers, Power Feed Edgers, Hand Feed Table Trimmers, Power Feed Table Trimmers, Chain Feed Trimmers, Lath Machines, Lath Trimmers, Traveling Bed Single Surfacers, Traveling Bed Double Surfacers, Traveling Bed Timber Surfacers, Sounding Board Surfacers, Roll Feed Surfacers, Matchers, Cutting-Off Tables, Shingle and Heading Machines, Shingle Packers, Clapboard Machinery, Belt Tighteners, Car Trucks, Friction Clutch Couplings, Wood Rim Pulleys

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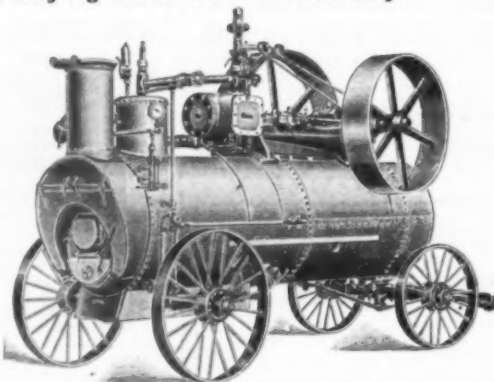
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Our Celebrated AJAX ENGINE and CORNISH BOILER is the only rig that does it successfully.

Mounted on  
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—Engine detached or  
mounted on  
boiler; return  
flue boiler,  
central fire  
box extending  
all the  
way through  
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Sizes from  
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## The Best Saw Mill Power on Earth.

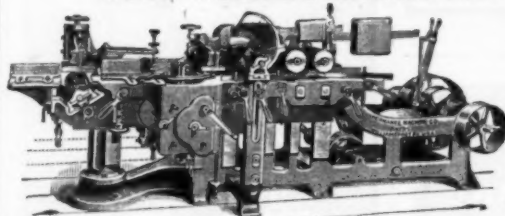
Farquhar Variable Friction Saw Mill, Farquhar Portable, Traction, Vertical Shingle Mills, Cut-Off Saws, Edgers.

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WOOD WORKING MACHINERY UP-TO-DATE.



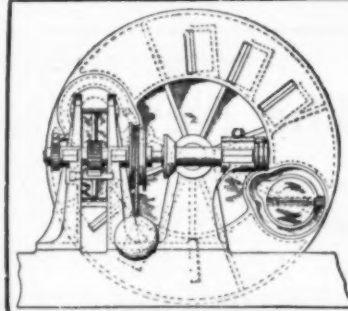
Wider belts, larger journals, stronger feed, side heads plane as smoothly as top heads, sectional independent pressure bars.

Send for descriptive circular with full details, and let us tell you about it.

Panel Raisers, Saw Benches, Surfacers, Gang Rip Saw, Self-Feed Rip Saws, Hand Planers, and other new and up-to-date machines.

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## The American Excelsior and Machine Company

is the manufacturer of an improved Rotary Machine for Producing Excelsior. It is unique.

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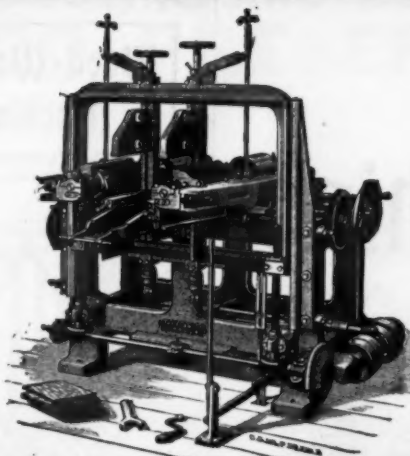
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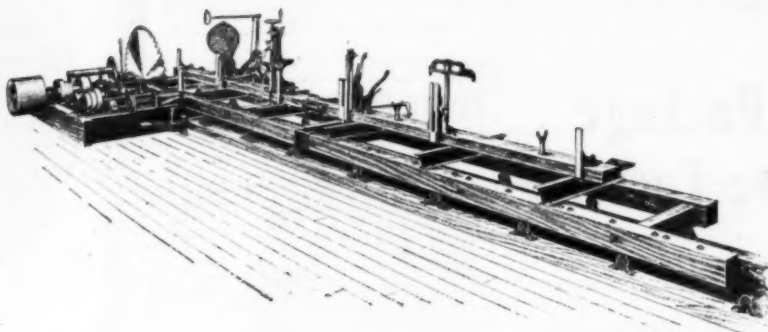
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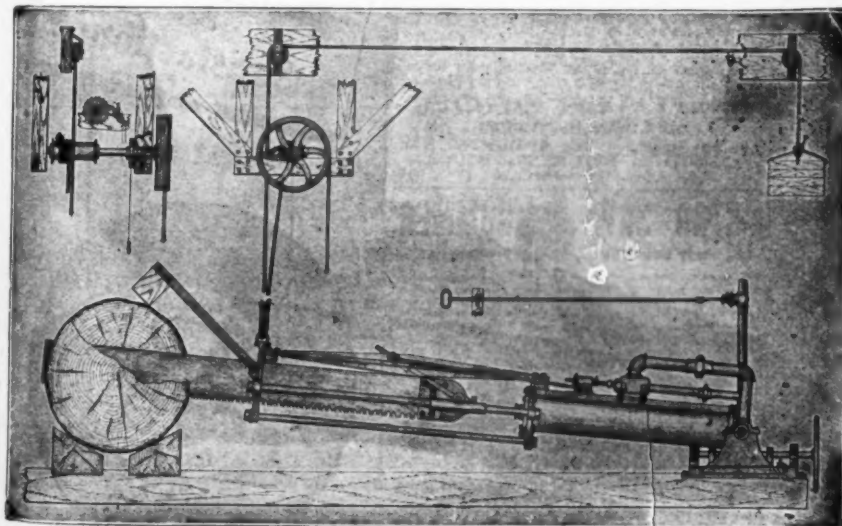
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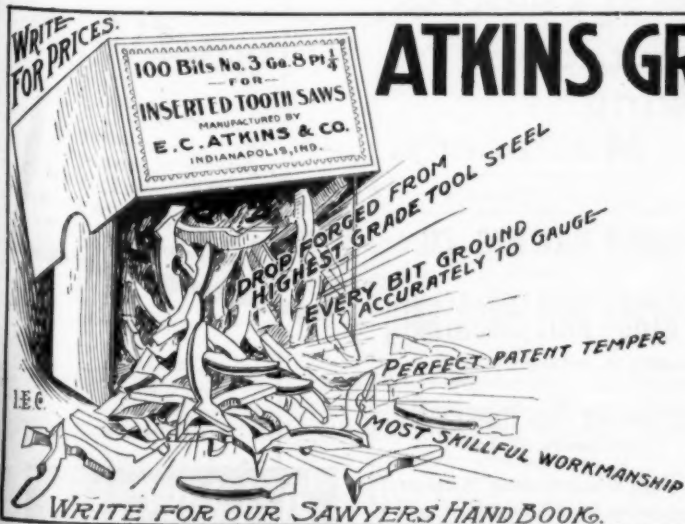
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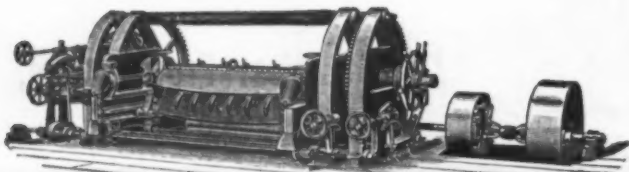
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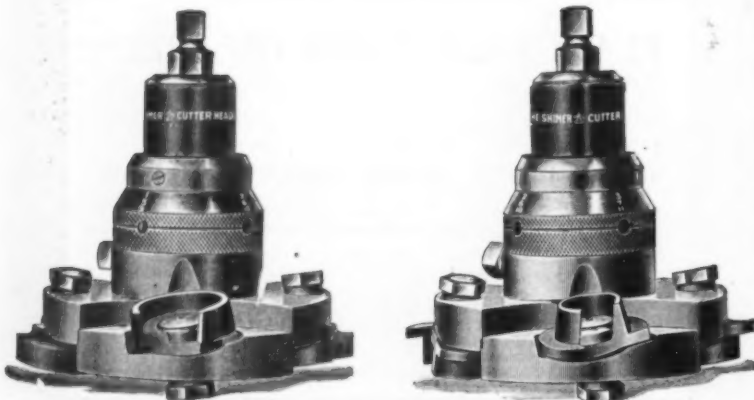
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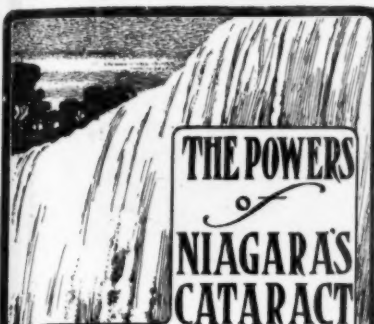
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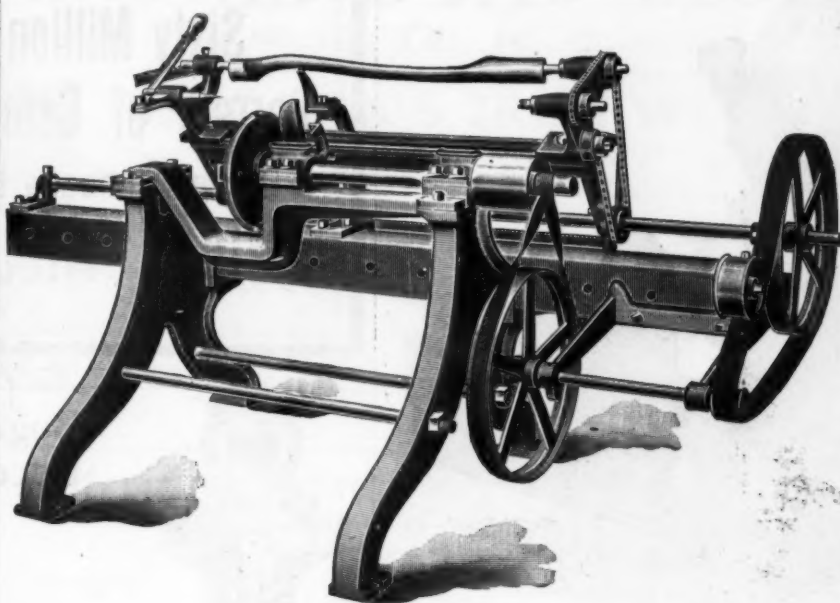
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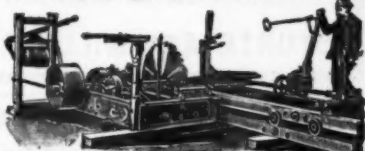
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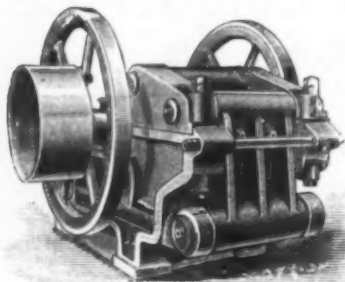


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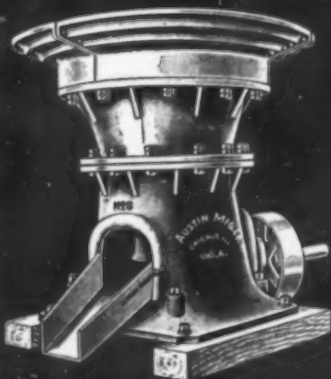
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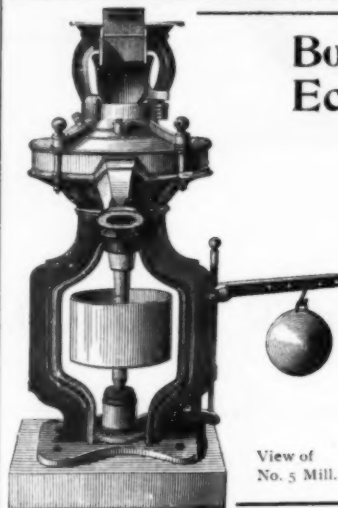
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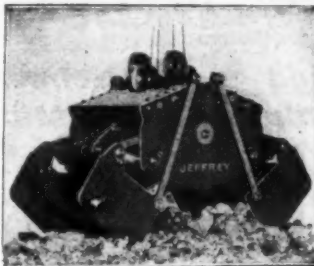
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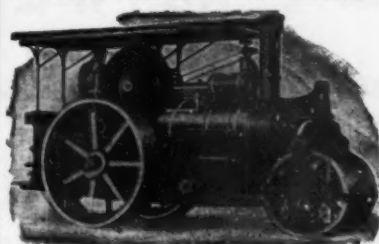
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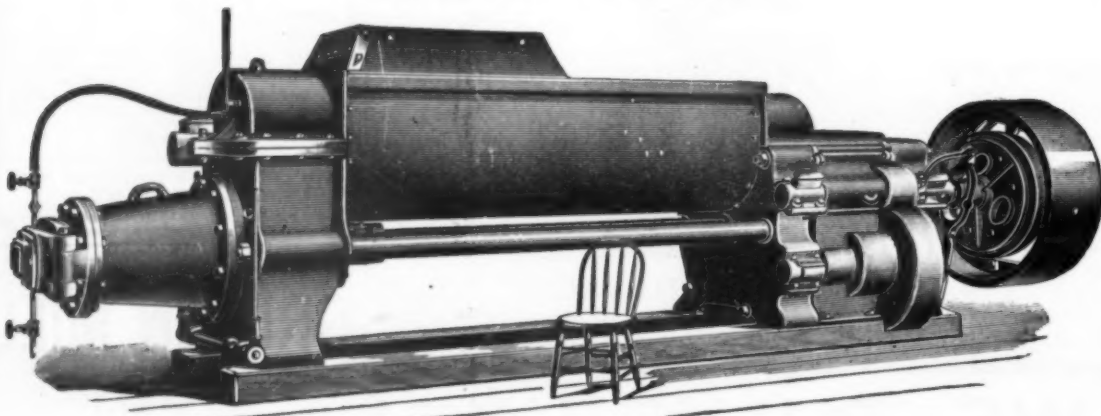
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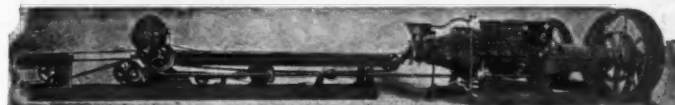
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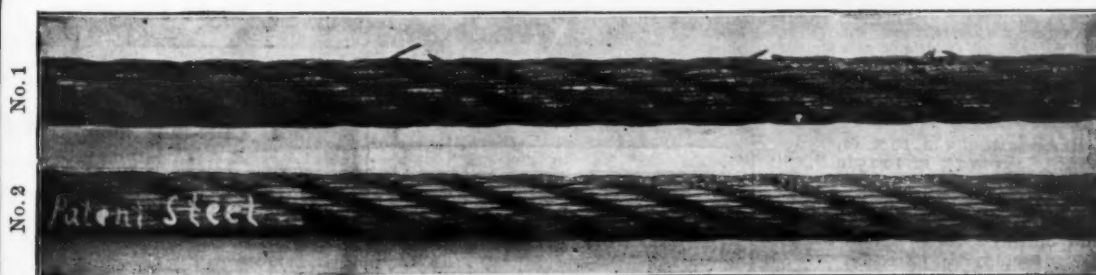
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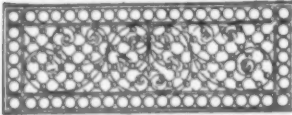


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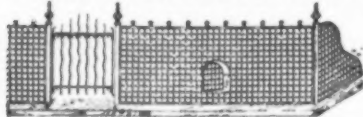
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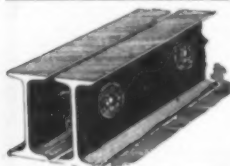
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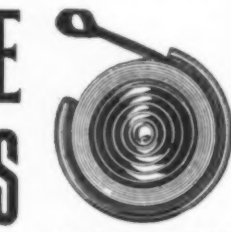
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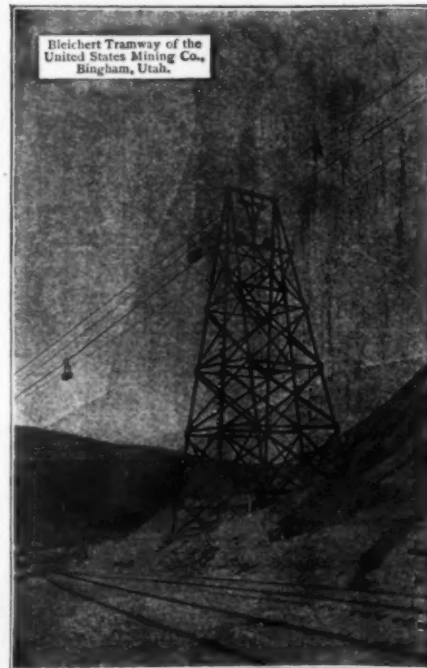
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8-in.	18 "	8-in.	11½ "	6-in. x 6-in. x ¾-in.	
9-in.	21 "	10-in.	15 "	4-in. x 3-in. x ½-in.	
10-in.	25 "	12-in.	20½ "	4-in. x 3-in. x 7/16-in.	
10-in.	25 "	15-in.	30 "	5-in. x 3½-in. x ½-in.	
12-in.	30 "	<b>Angles—Even Legs</b>		5-in. x 3½-in. x ¾-in.	
12-in.	30 "	2-in. x 2-in. x ¼-in.		6-in. x 3½-in. x ½-in.	
15-in.	42 "	2½-in. x 2½-in. x ¼-in.		6-in. x 3½-in. x ¾-in.	
15-in.	42 "	3-in. x 3-in. x ¼-in.		6-in. x 4-in. x ½-in.	
18-in.	50 "	3-in. x 3-in. x ¾-in.			
20-in.	65 "	4-in. x 4-in. x ½-in.			
24-in.	80 "				

All angles, channels and beams up to and including 15 in. x 50-lb. are carried in 60-ft. and 65-ft. bars; 18-in. 55-lb. beams in 30-ft., 33-ft. and 36-ft. bars; 20-in. 65-lb. beams in 35-ft., 38-ft. and 40-ft. bars; 24-in. 80-lb. beams in 40-ft., 45-ft. and 48-ft. bars.

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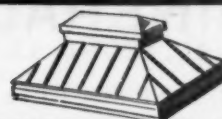
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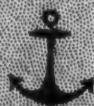
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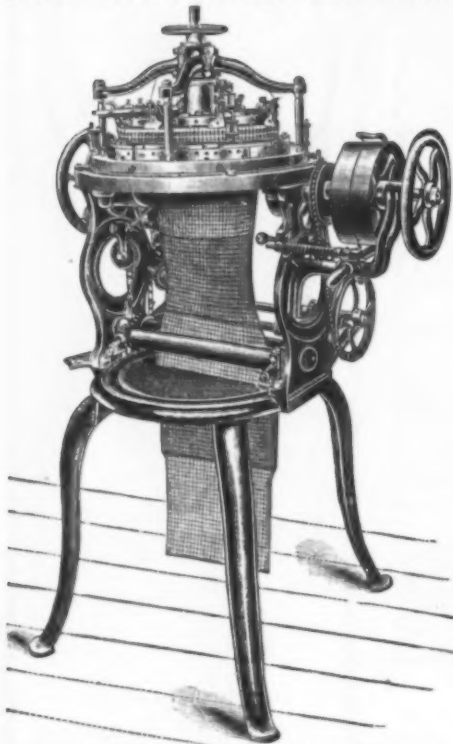
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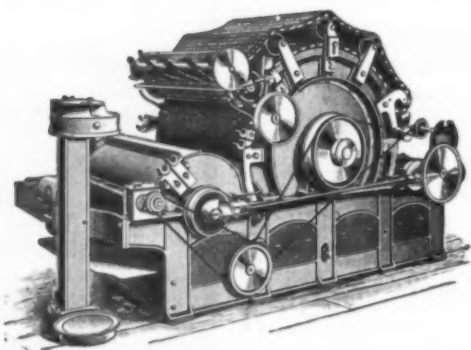
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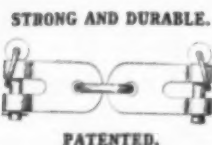
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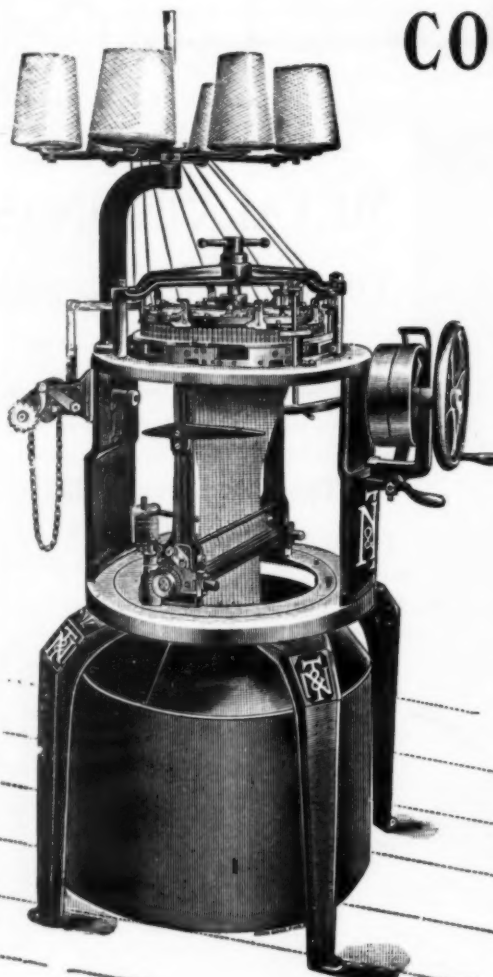
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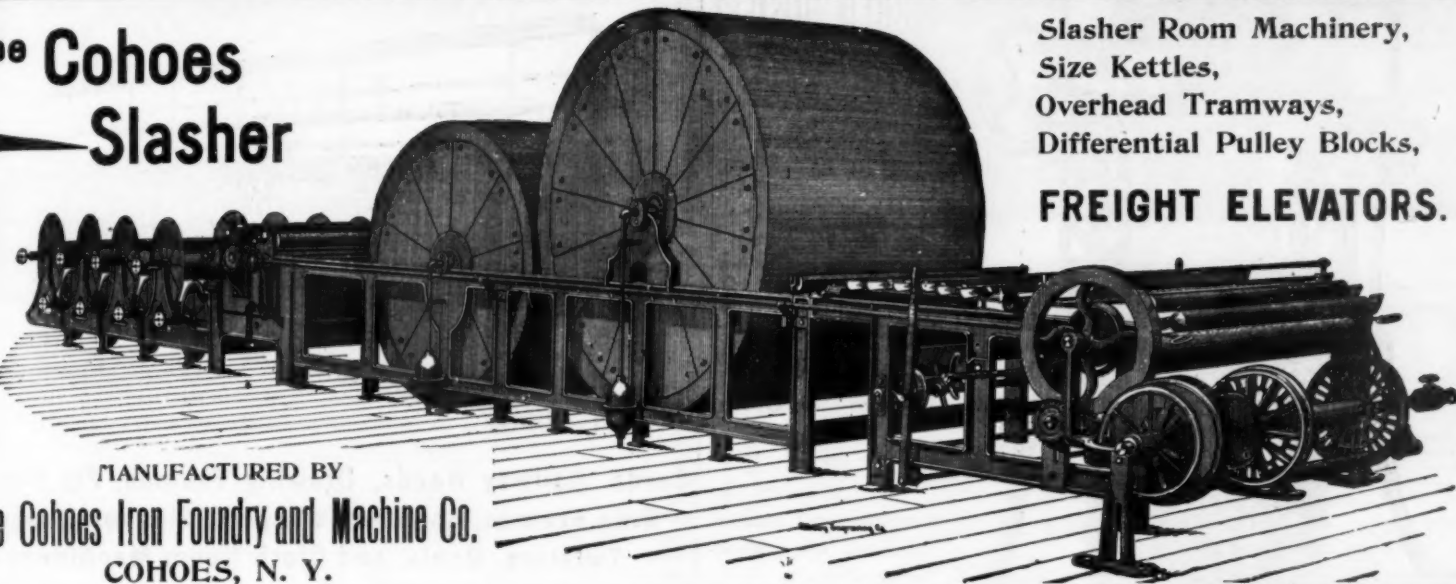
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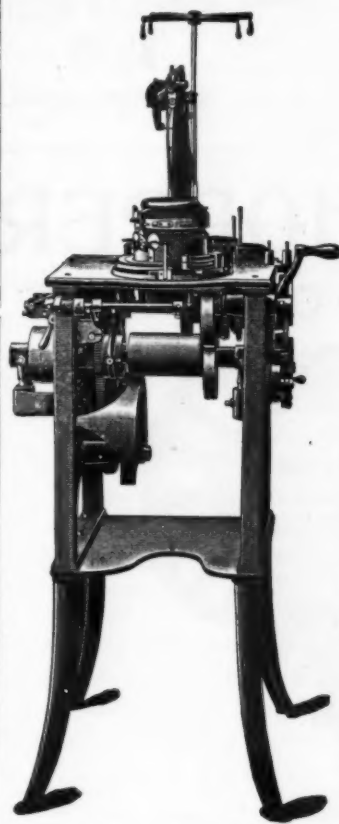
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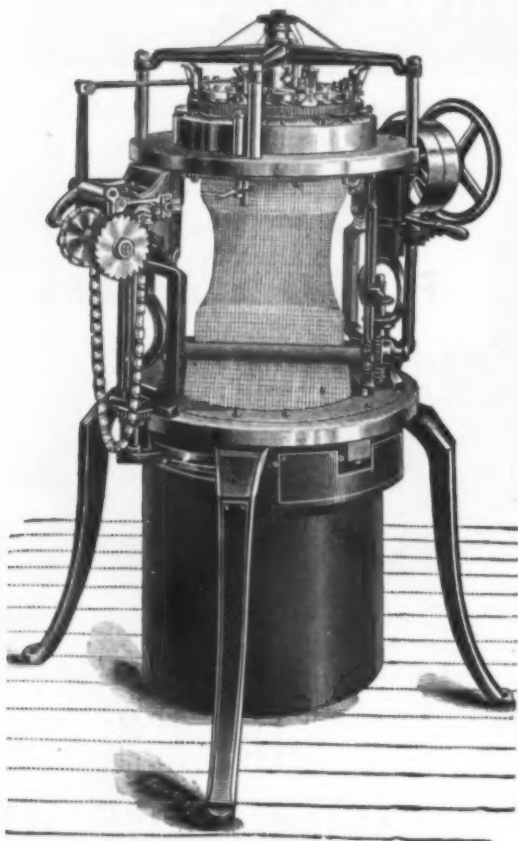
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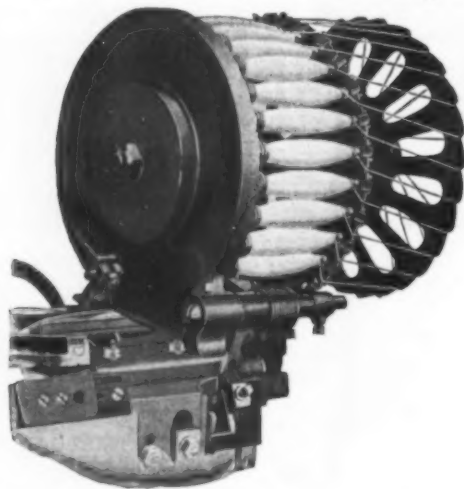
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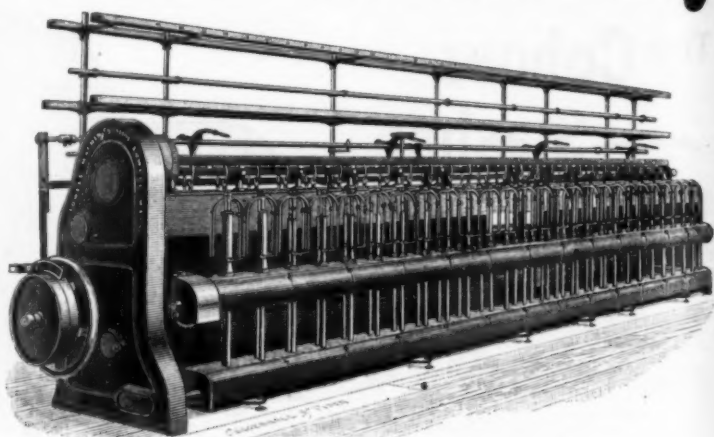
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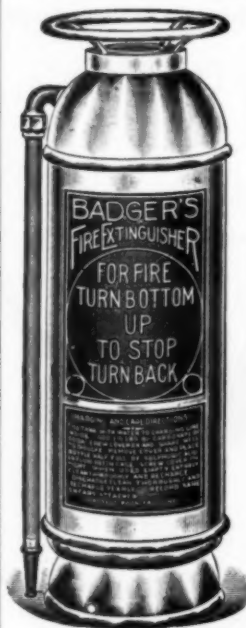
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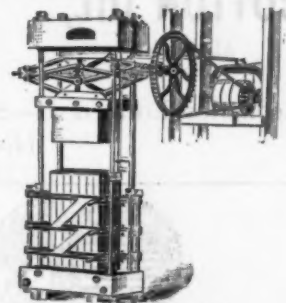
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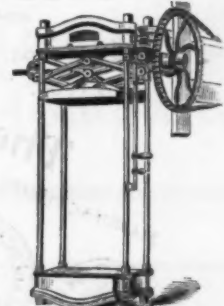
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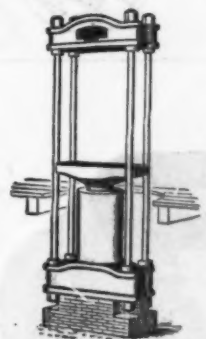
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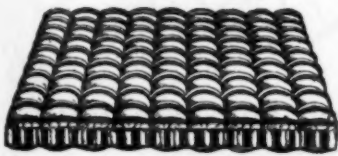


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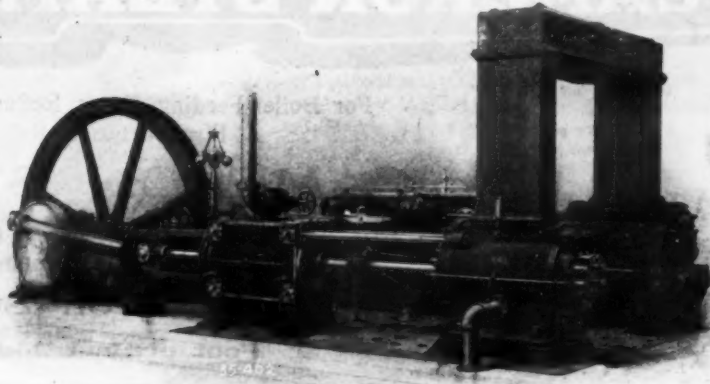
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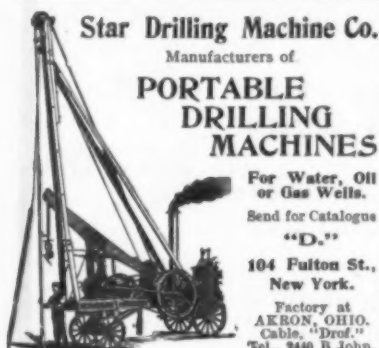
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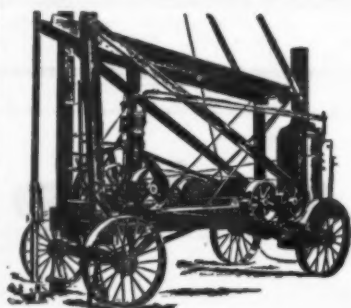
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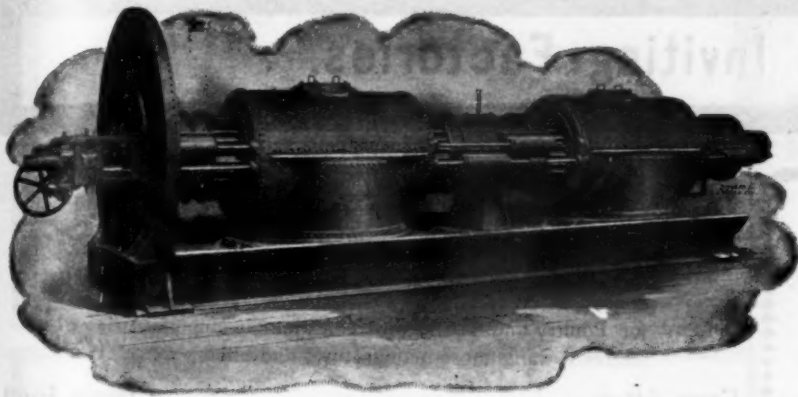


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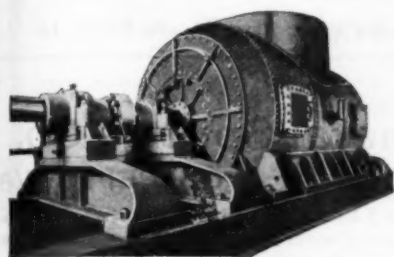
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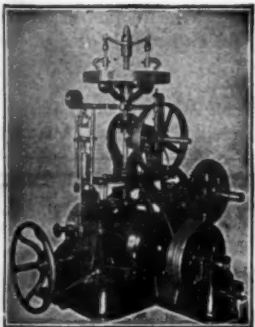
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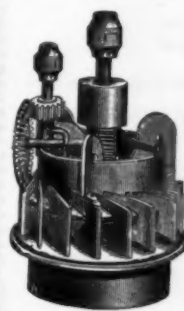
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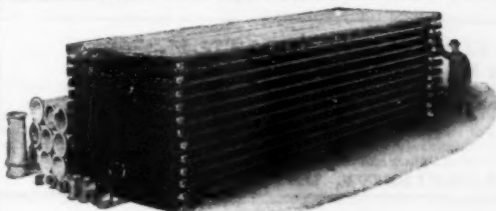
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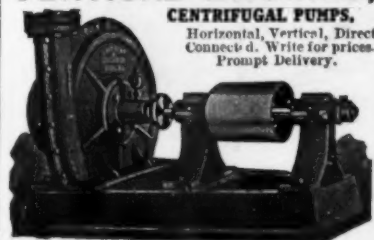
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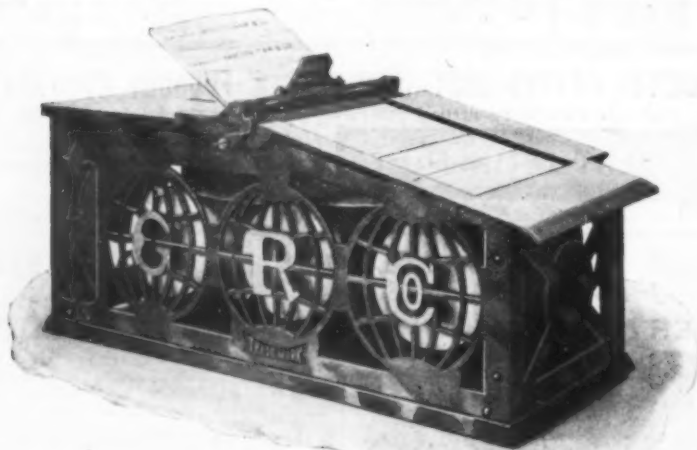
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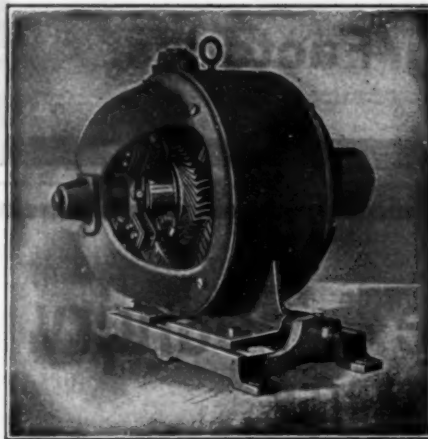
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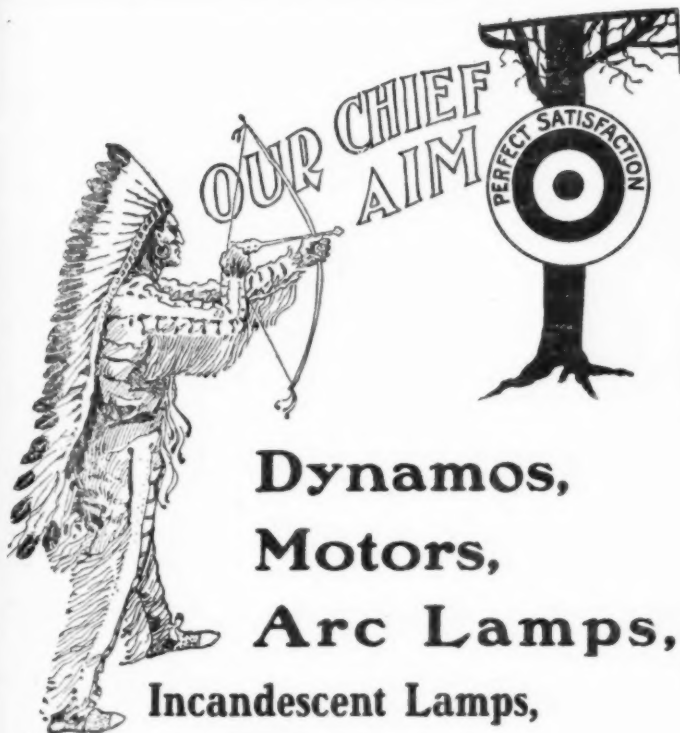
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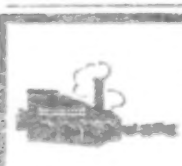
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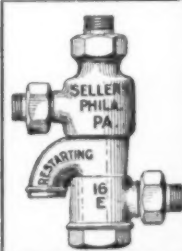
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